Supplementary Information **Open Access**

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Supplement: DMFDMA catalyzed synthesis of 2-((Dimethylamino)methylene)-3,4-dihydro-9-arylacridin-1(2*H*)-ones and their derivatives: *in-vitro* antifungal, antibacterial and antioxidant evaluations

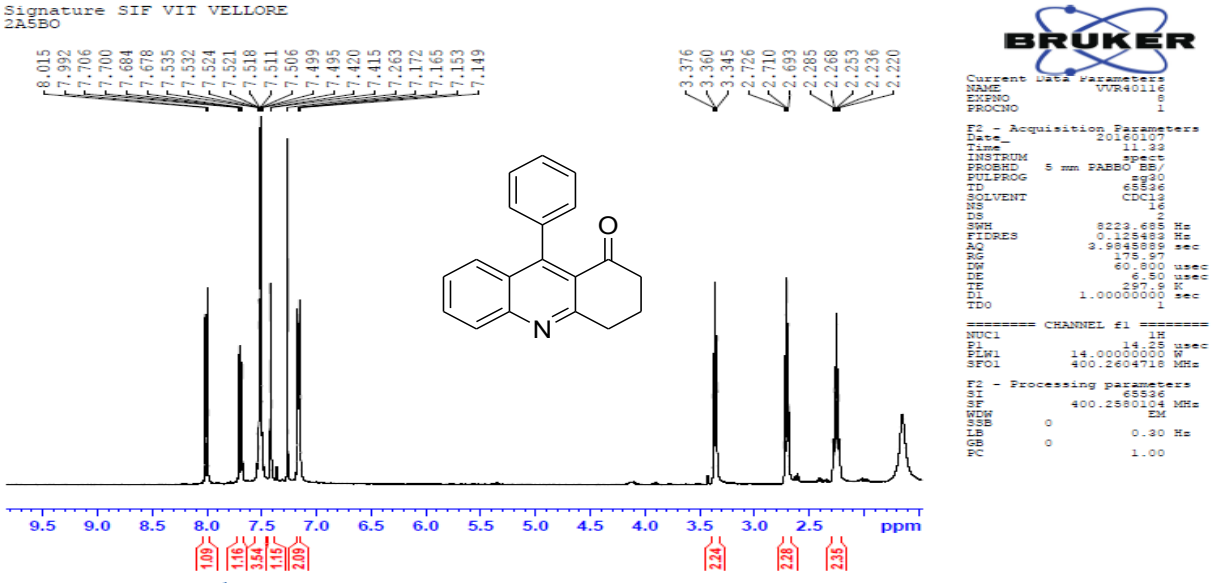

Figure 1: ^{1}H NMR spectrum of *3,4-dihydro-9-phenylacridin-1(2H)-one* (2a):

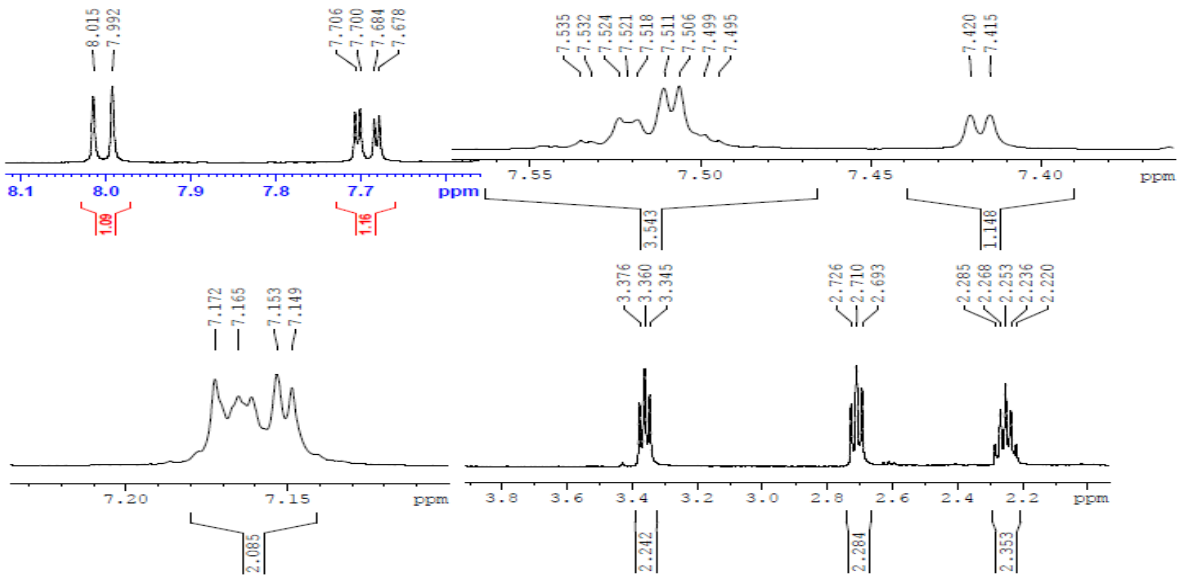

Figure 2: Enlarged ^{1}H NMR spectrum of *3,4-dihydro-9-phenylacridin-1(2H)-one* (2a):

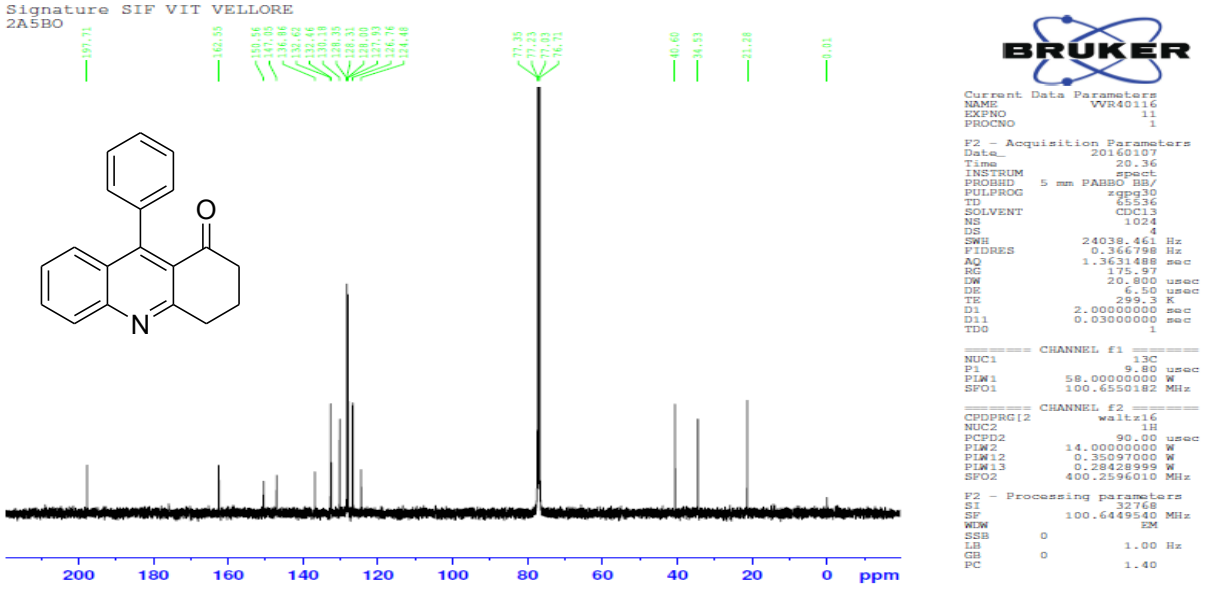

Figure 3: ^{13}C NMR spectrum of *3,4-dihydro-9-phenylacridin-1(2H)-one* (2a):

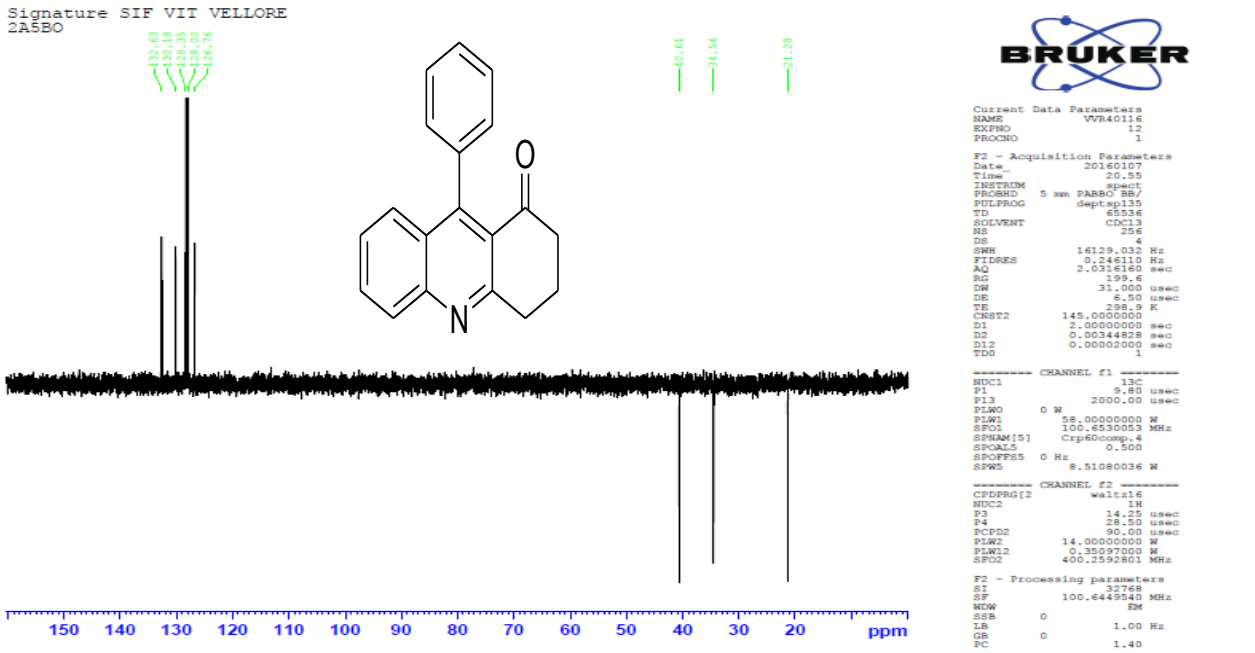

Figure 4: DEPT 135 spectrum of *3,4-dihydro-9-phenylacridin-1(2H)-one* (2a):

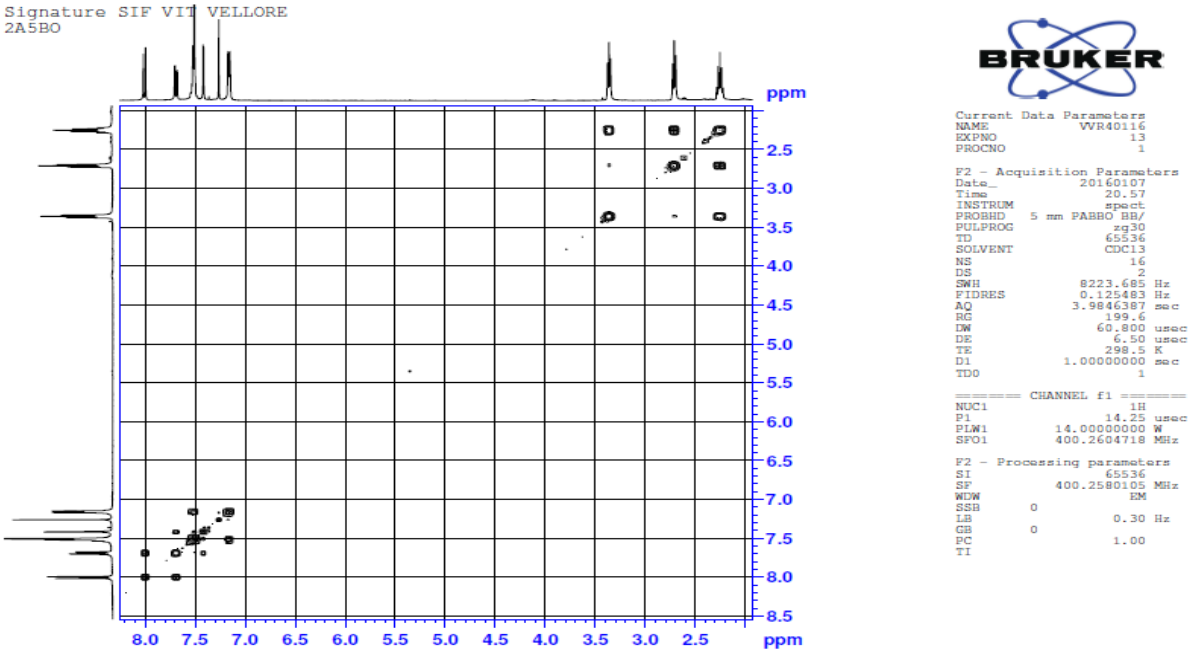

Figure 5: H-H COSY spectrum of *3,4-dihydro-9-phenylacridin-1(2H)-one* (2a):

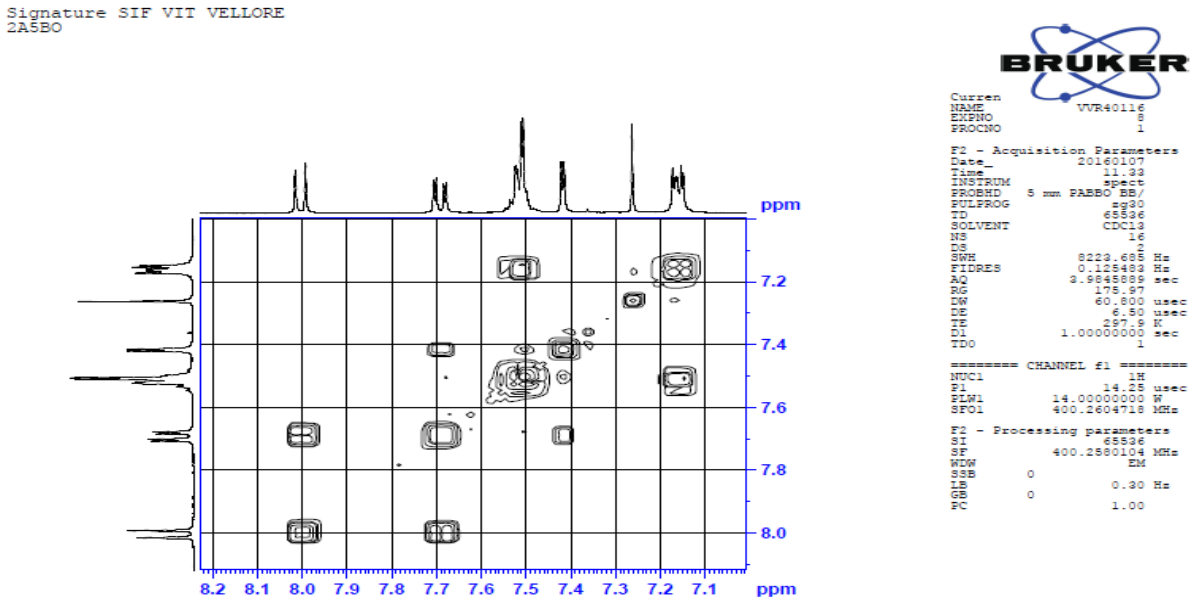

Figure 6: Enlarged H-H COSY spectrum of *3,4-dihydro-9-phenylacridin-1(2H)-one* (2a):

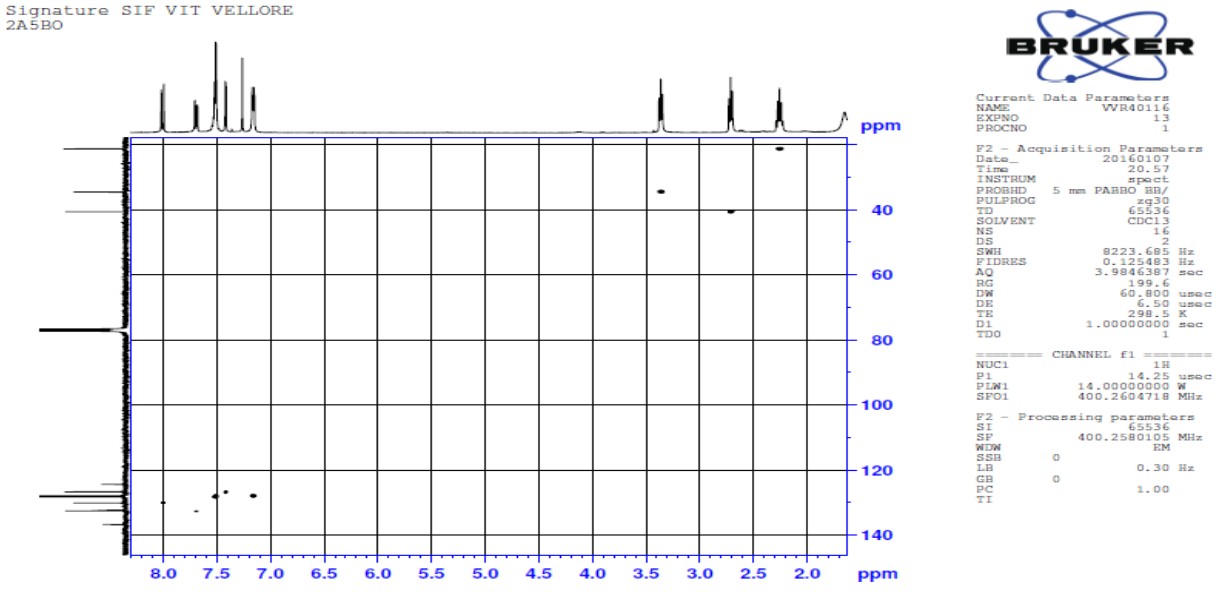

Figure 7: HSQC of spectrum *3,4-dihydro-9-phenylacridin-1(2H)-one* (2a):

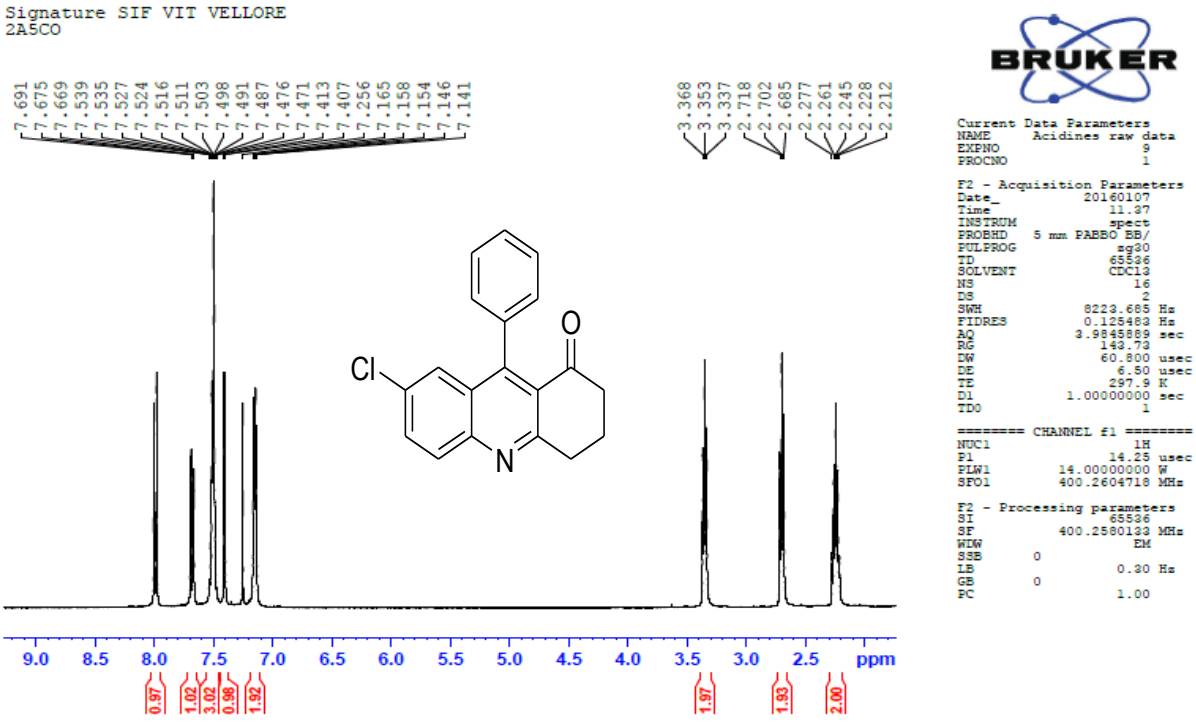

Figure 8: ^{1}H NMR spectrum of *7-chloro-3,4-dihydro-9-phenylacridin-1(2H)-one* (2b):

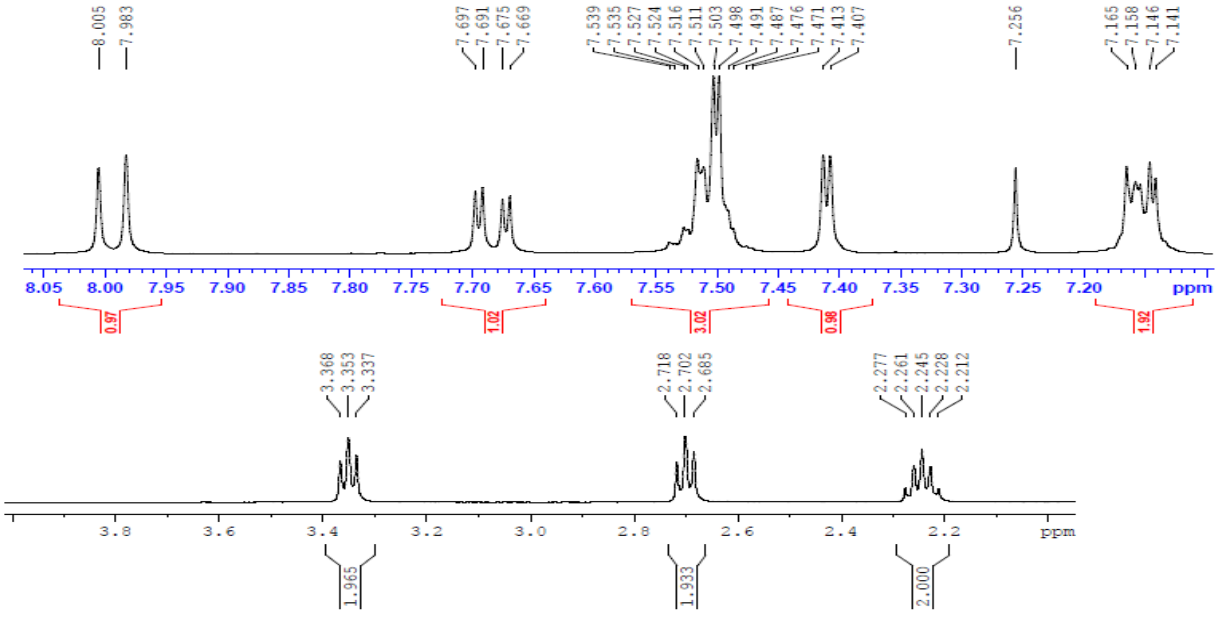

Figure 9: Enlarged ^{1}H NMR spectrum of *7-chloro-3,4-dihydro-9-phenylacridin-1(2H)-one* (2b):

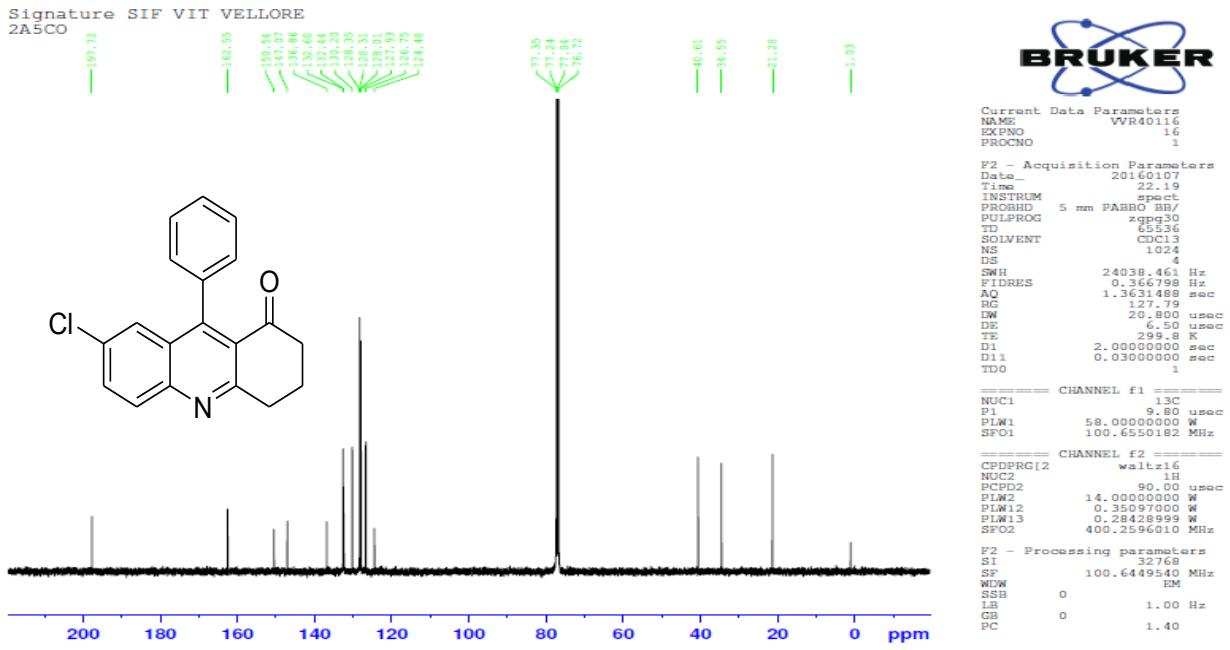

Figure 10: ^{13}C NMR spectrum of *7-chloro-3,4-dihydro-9-phenylacridin-1(2H)-one* (2b):

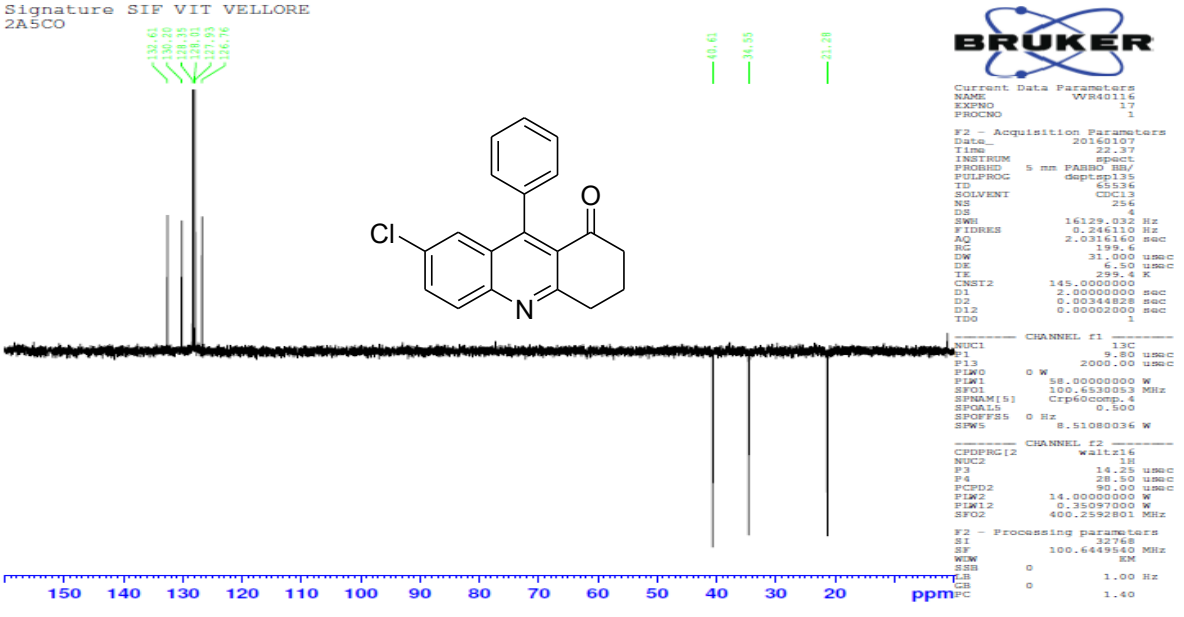

Figure 11: DEPT 135 spectrum of *7-chloro-3,4-dihydro-9-phenylacridin-1(2H)-one* (2b):

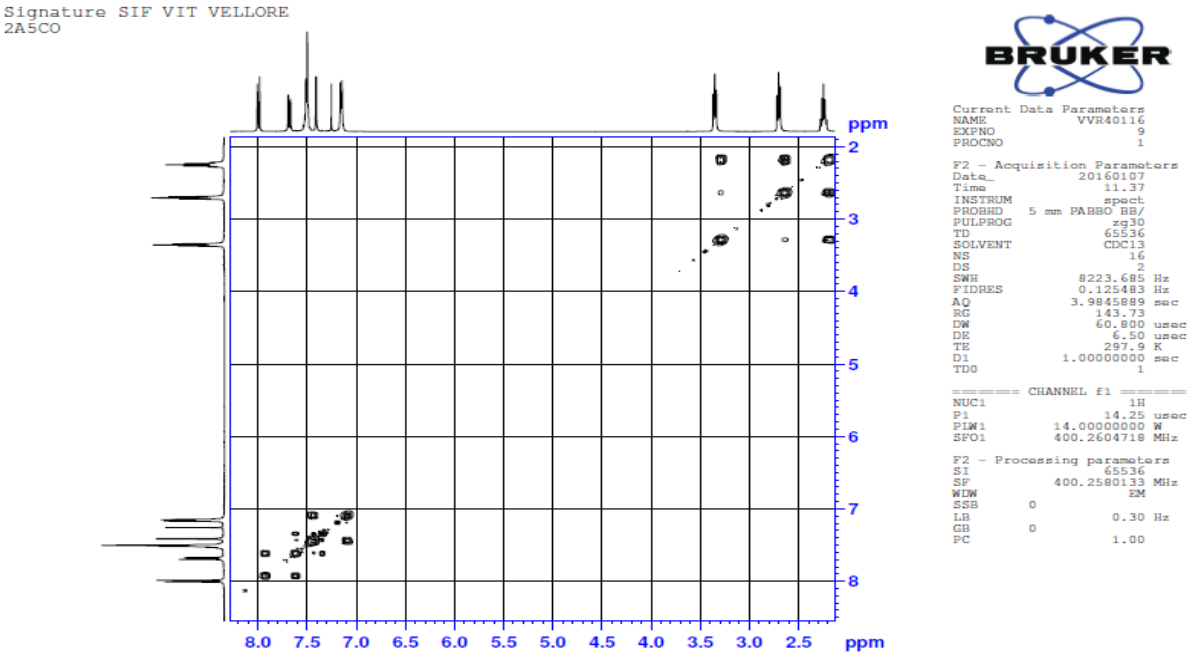

Figure 12: H-H COSY spectrum of *7-chloro-3,4-dihydro-9-phenylacridin-1(2H)-one* (2b):

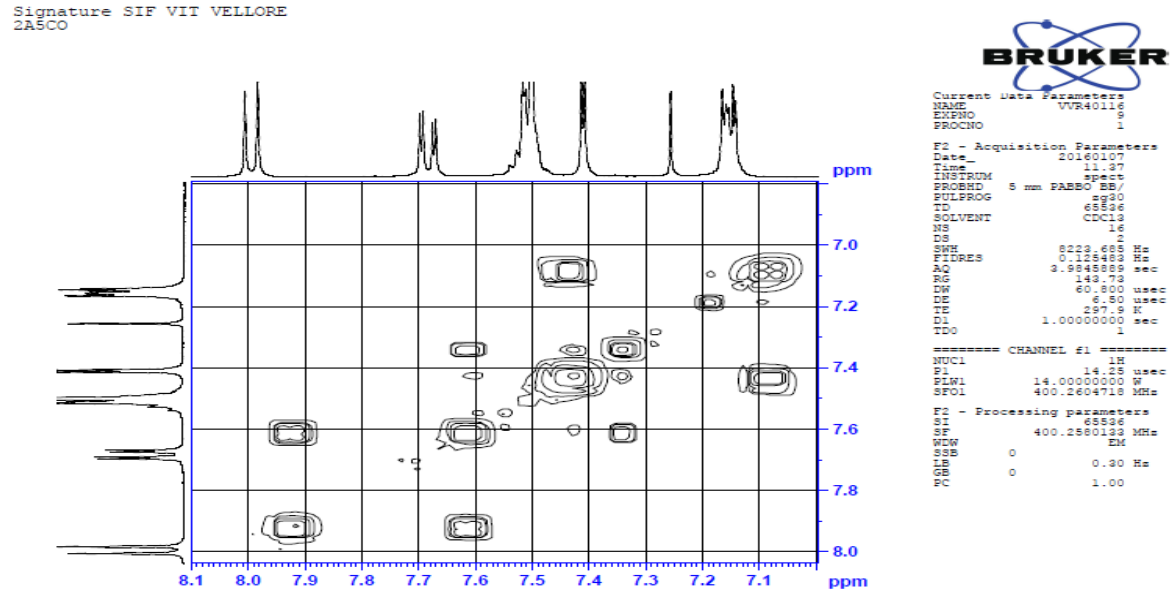

Figure 13: Enlarged H-H COSY spectrum of *7-chloro-3,4-dihydro-9-phenylacridin-1(2H)-one* (2b):

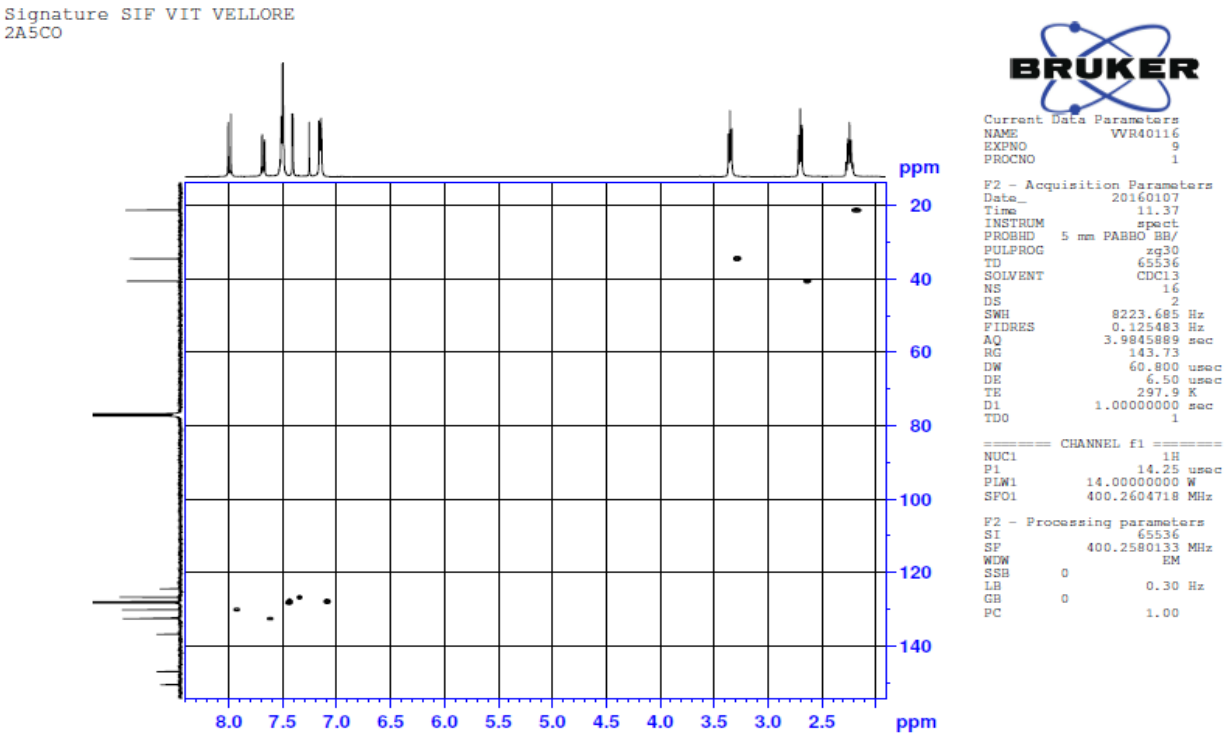

Figure 14: HSQC spectrum of *7-chloro-3,4-dihydro-9-phenylacridin-1(2H)-one* (2b)*:*

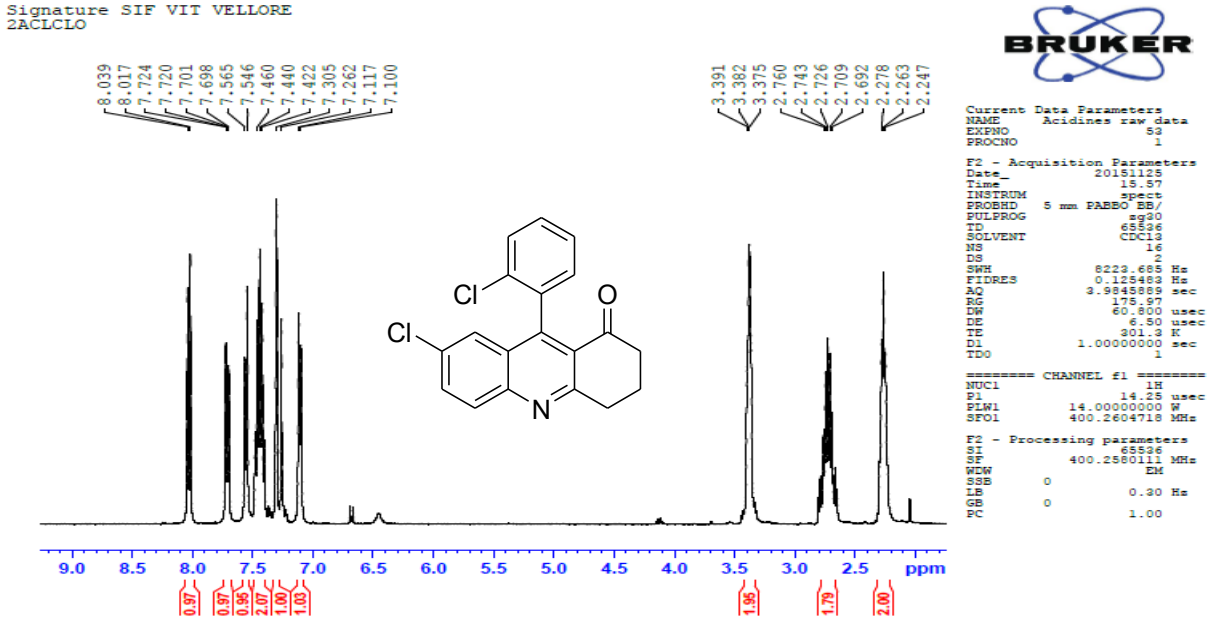

Figure 15: ^{1}H NMR spectrum of *7-chloro-9-(2-chlorophenyl)-3,4-dihydroacridin-1(2H)-one* (2c):

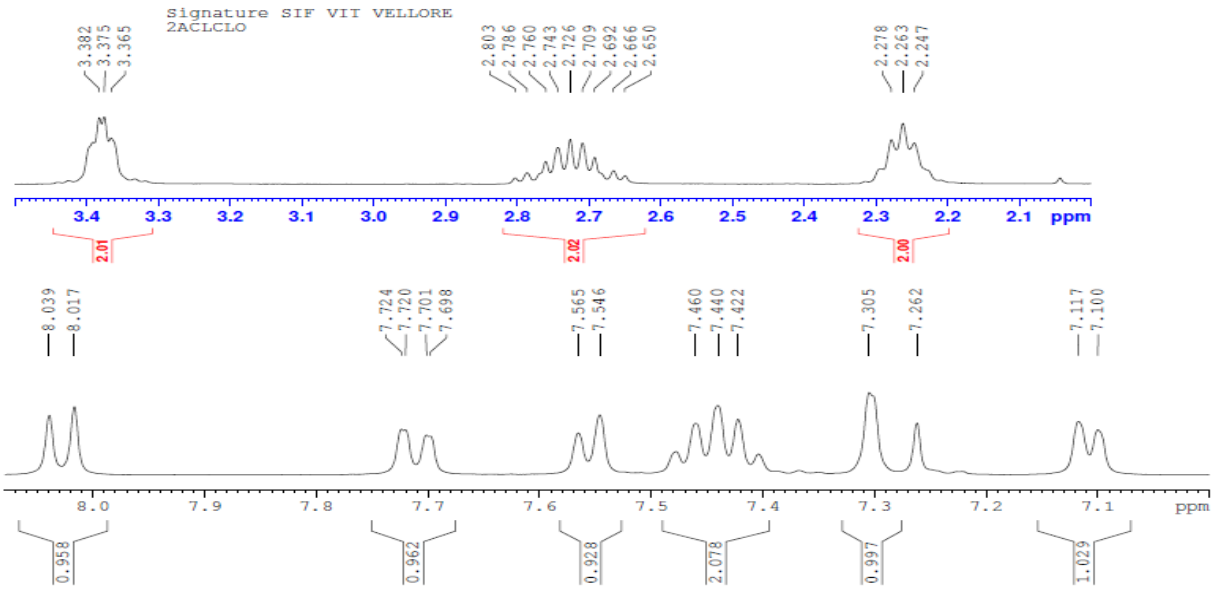

Figure 16: Enlarged ^{1}H NMR spectrum of *7-chloro-9-(2-chlorophenyl)-3,4-dihydroacridin-1(2H)-one* (2c):

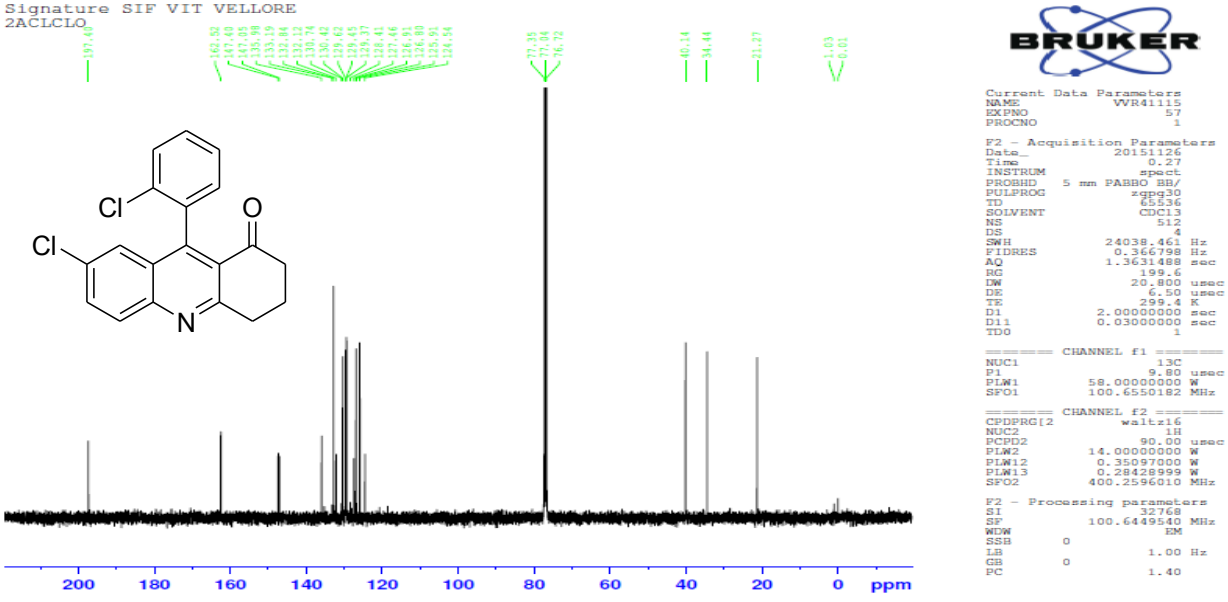

Figure 17: ^{13}C NMR spectrum of *7-chloro-9-(2-chlorophenyl)-3,4-dihydroacridin-1(2H)-one* (2c) :

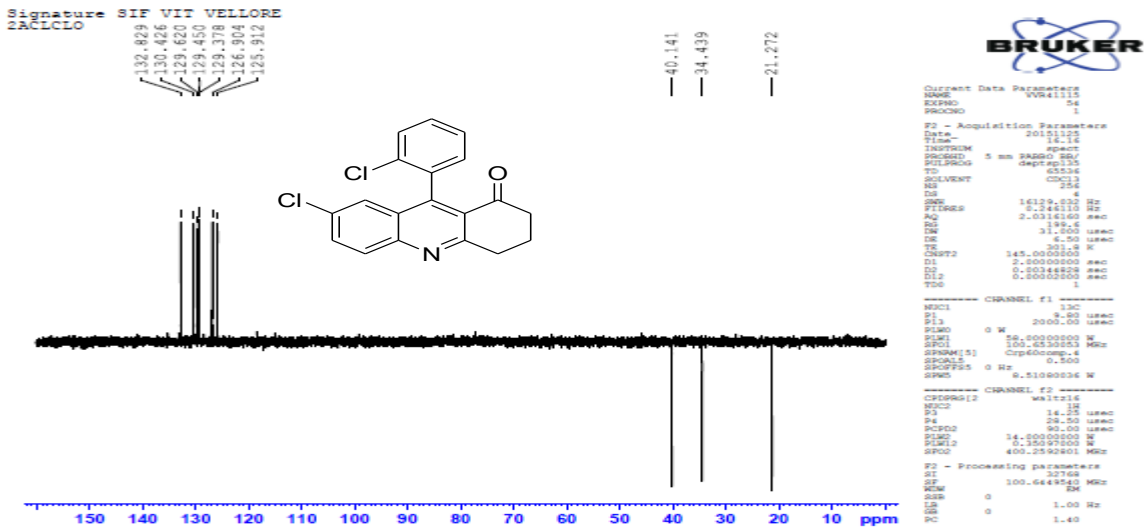

Figure 18: DEPT-135 spectrum of *7-chloro-9-(2-chlorophenyl)-3,4-dihydroacridin-1(2H)-one* (2c):

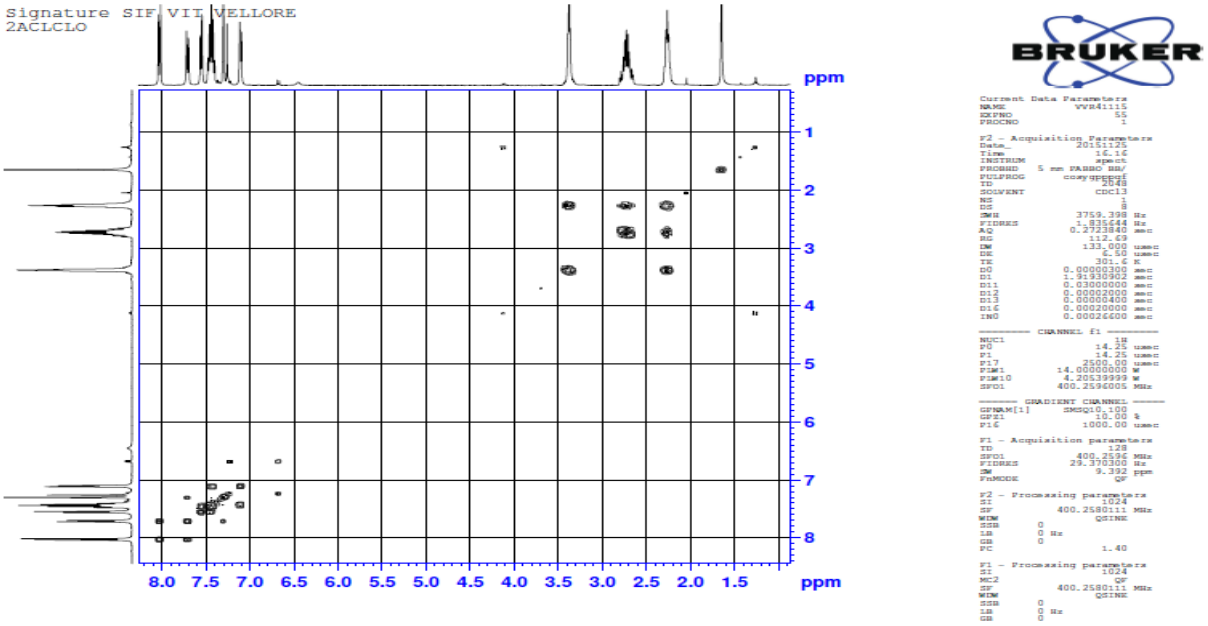

Figure 19: H-H COSY spectrum of *7-chloro-9-(2-chlorophenyl)-3,4-dihydroacridin-1(2H)-one* (2c):

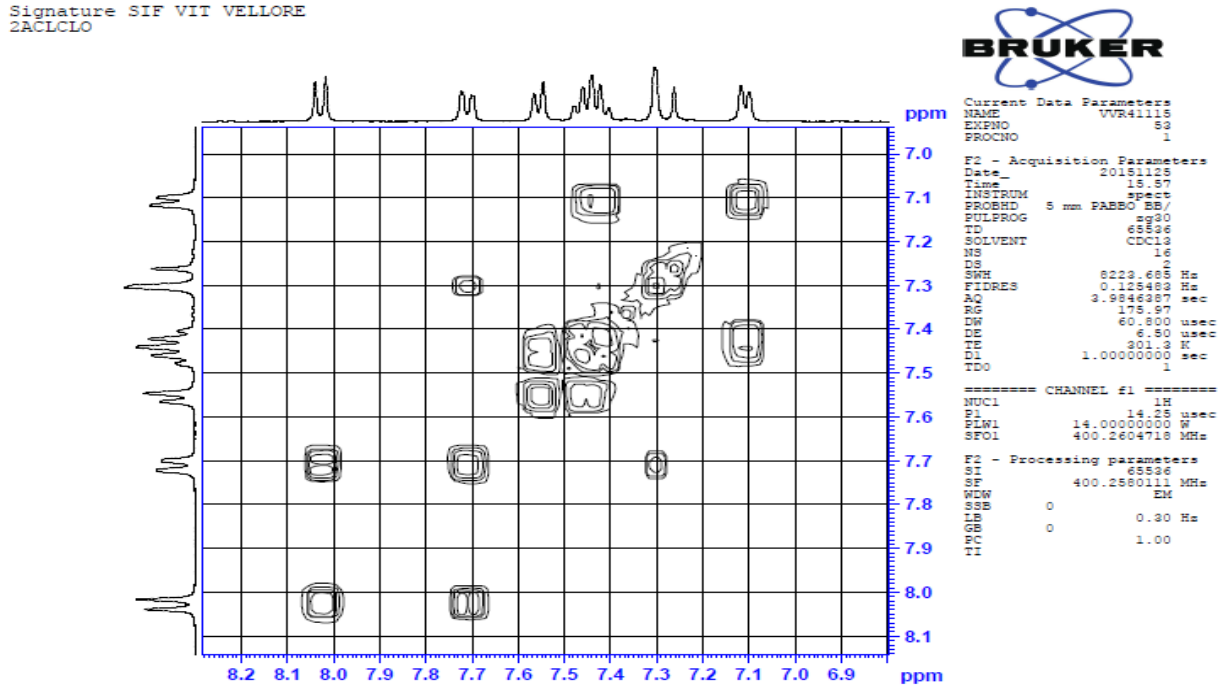

Figure 20: Enlarged H-H COSY spectrum of *7-chloro-9-(2-chlorophenyl)-3,4-dihydroacridin-1(2H)-one* (2c):

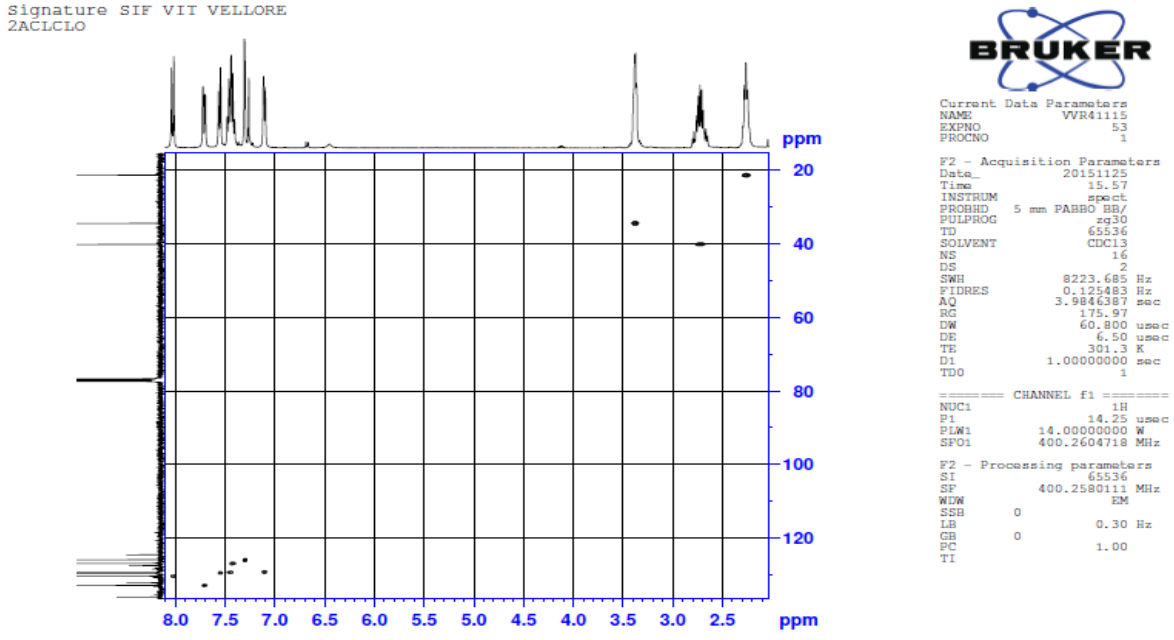

Figure 21: Enlarged HSQC spectrum of *7-chloro-9-(2-chlorophenyl)-3,4-dihydroacridin-1(2H)-one* (2c):

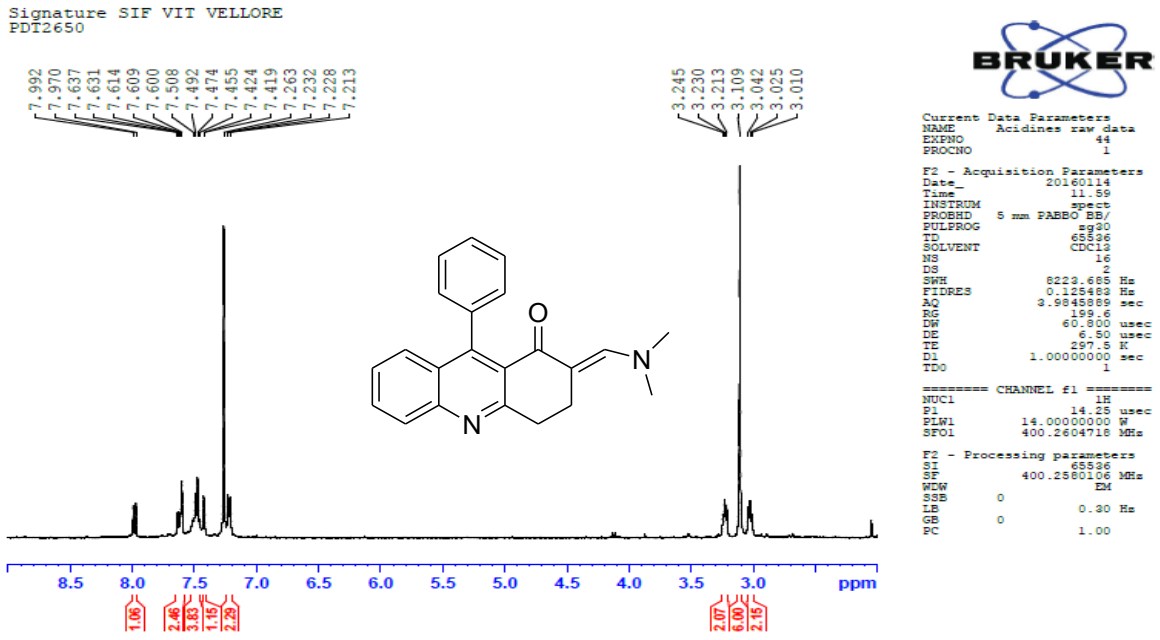

Figure 22: ^{1}H NMR spectrum of *(E)-2-((dimethylamino)methylene)-3,4-dihydro-9-phenylacridin-1(2H)-one* (3a):

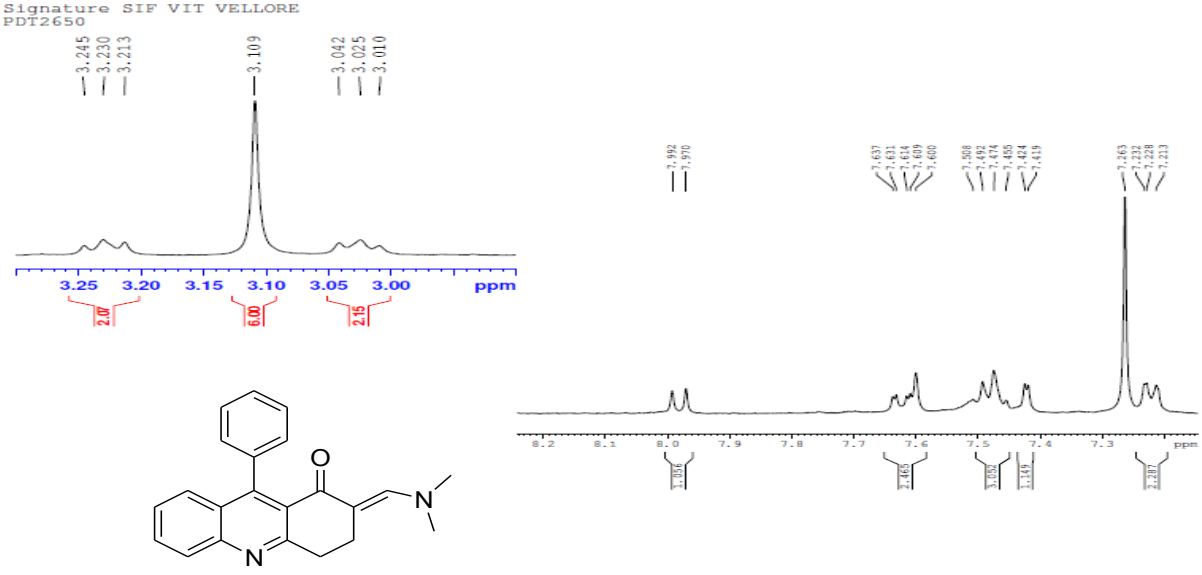

Figure 23: Enlarged ^{1}H NMR spectrum of *(E)-2-((dimethylamino)methylene)-3,4-dihydro-9-phenylacridin-1(2H)-one* (3a):

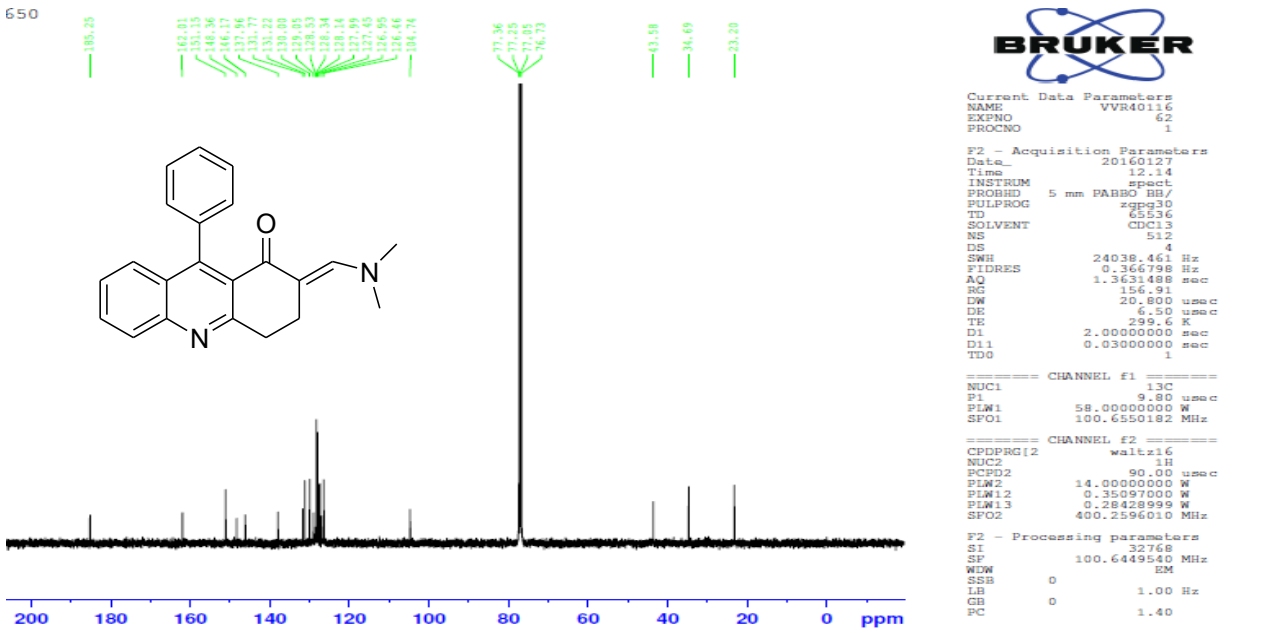

Figure 24: ^{13}C NMR spectrum of *(E)-2-((dimethylamino)methylene)-3,4-dihydro-9-phenylacridin-1(2H)- one* (3a):

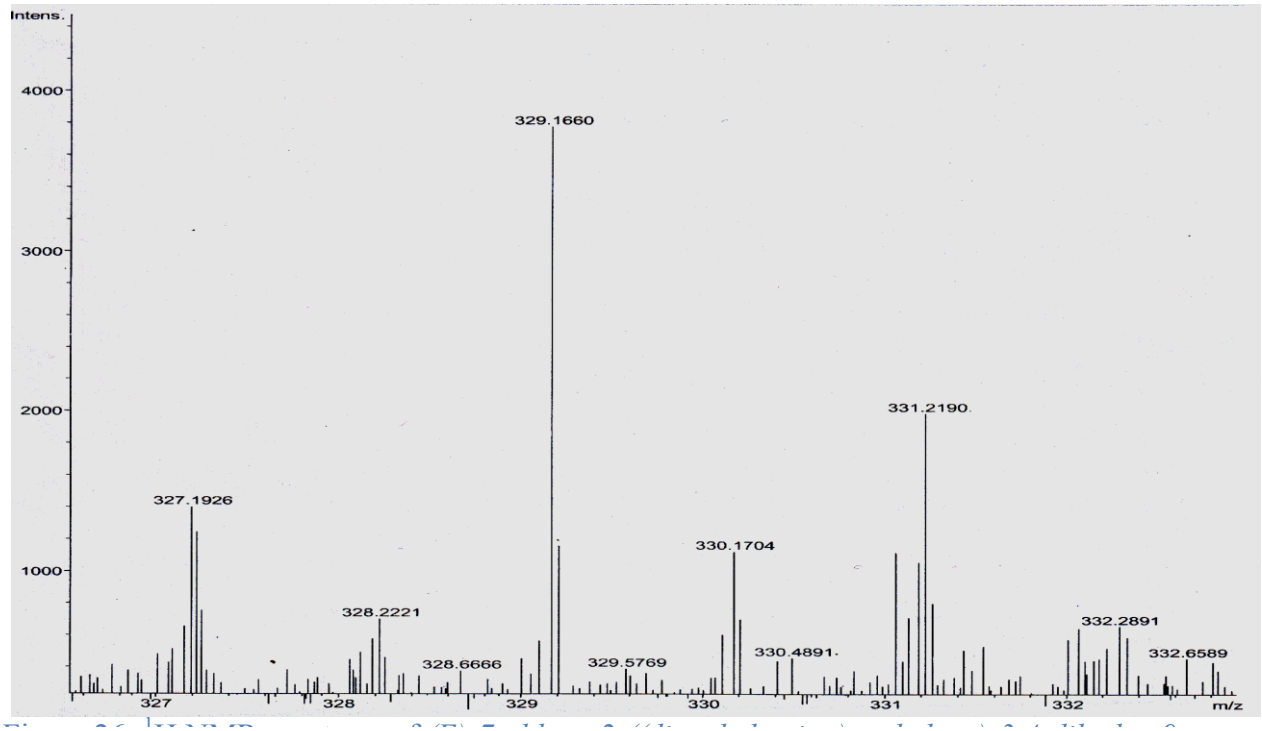

Figure 25: HRMS of *(E)-2-((dimethylamino)methylene)-3,4-dihydro-9-phenylacridin-1(2H)- one* (3a):

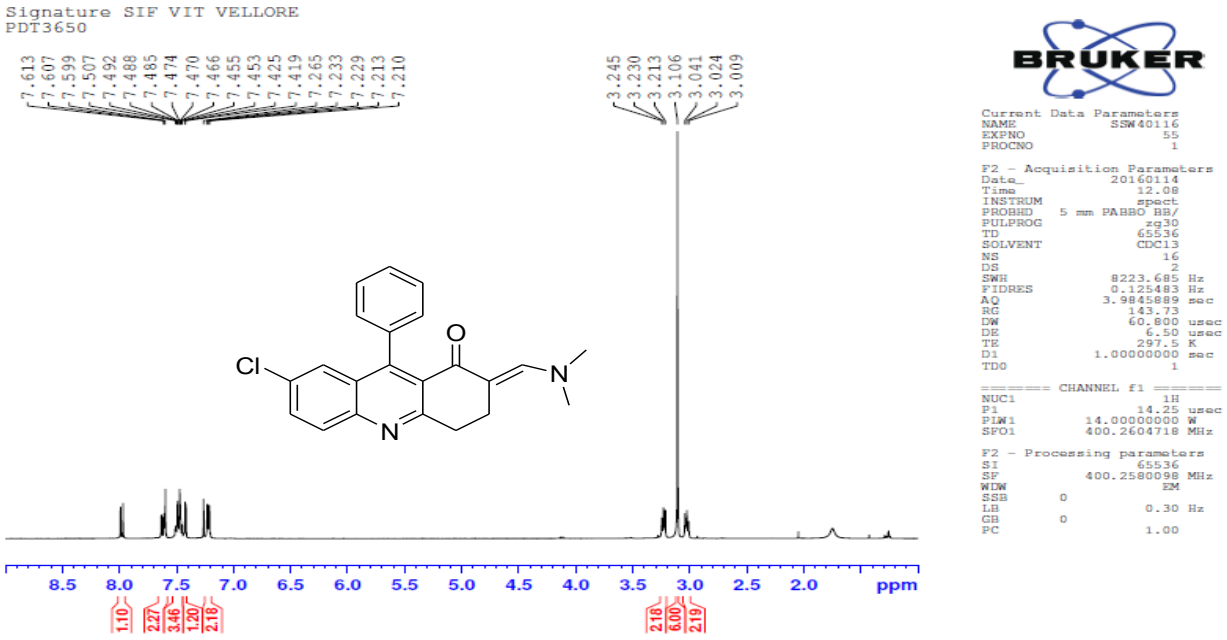

Figure 26: ^{1}H NMR spectrum of *(E)-7-chloro-2-((dimethylamino)methylene)-3,4-dihydro-9-phenylacridin-1(2H)-one* (3b):

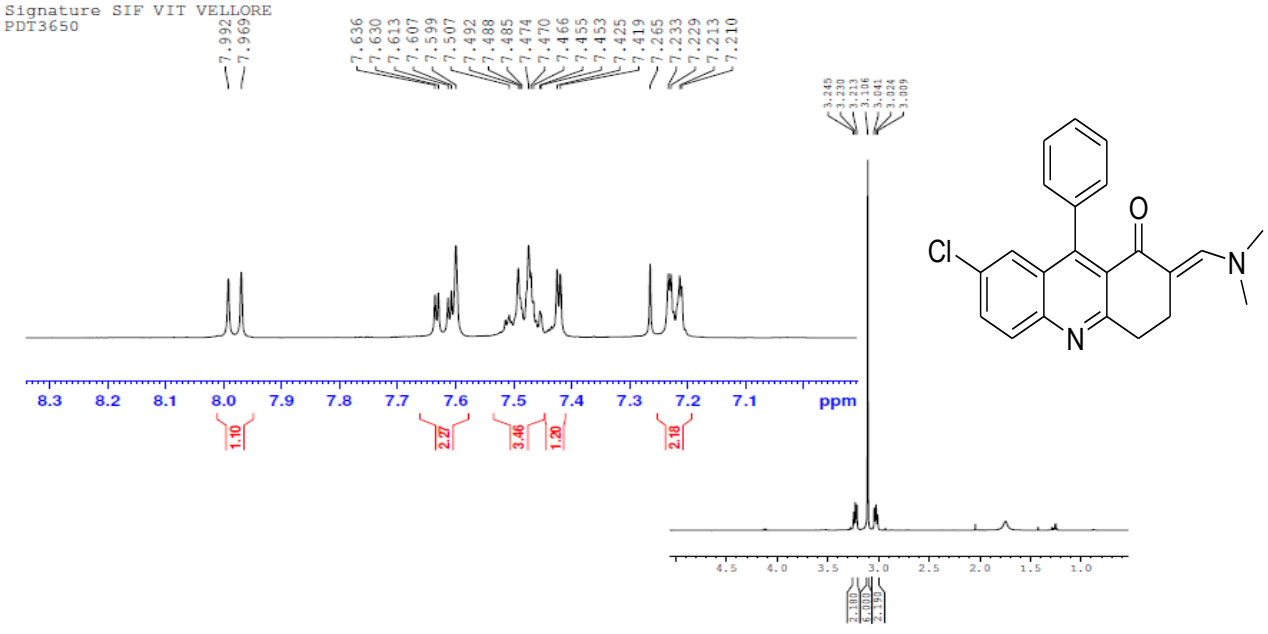

Figure 27: Enlarged ^{1}H NMR spectrum of *(E)-7-chloro-2-((dimethylamino)methylene)-3,4-dihydro-9-phenylacridin-1(2H)-one* (3b):

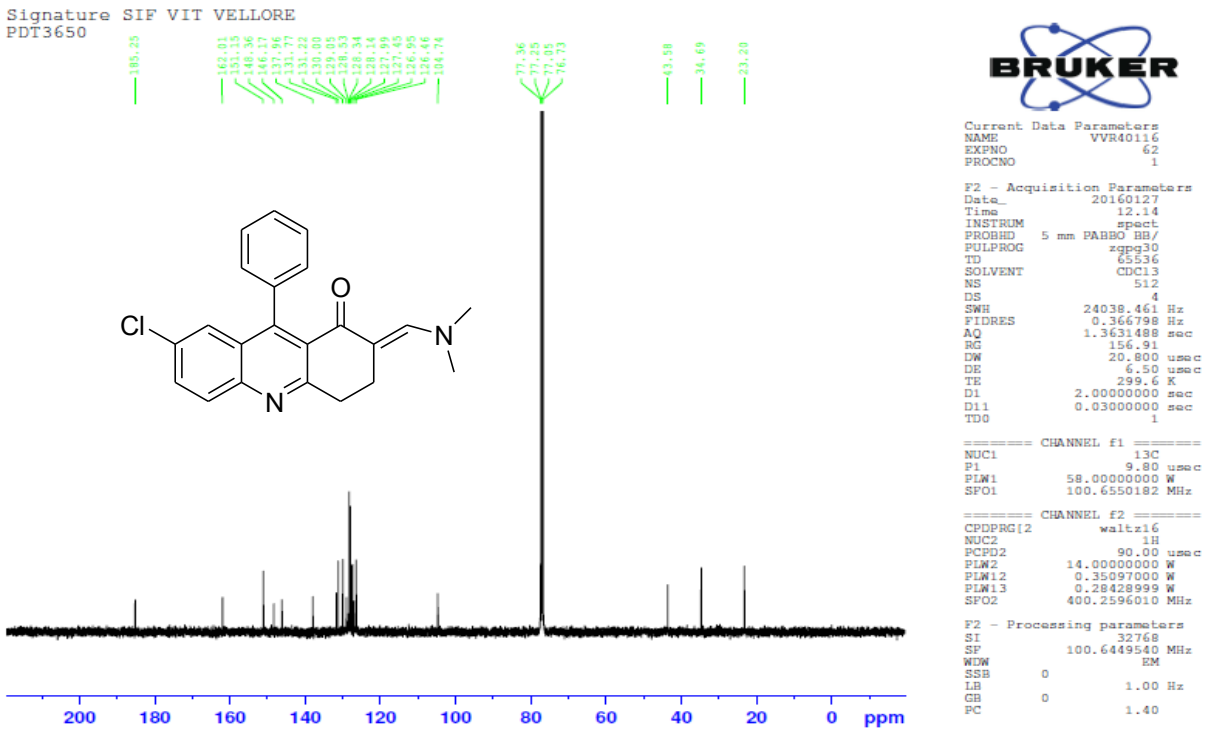

Figure 28: ^{13}C NMR spectrum of *(E)-7-chloro-2-((dimethylamino)methylene)-3,4-dihydro-9-phenylacridin-1(2H)-one* (3b):

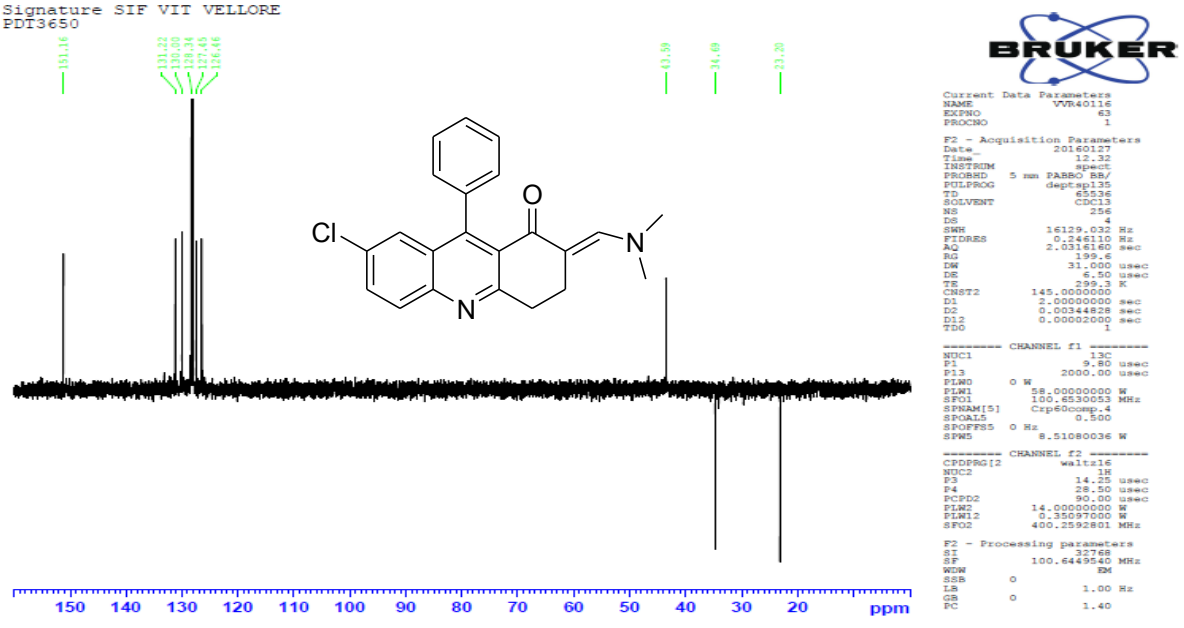

Figure 29: DEPT-135 spectrum of *(E)-7-chloro-2-((dimethylamino)methylene)-3,4-dihydro-9-phenylacridin-1(2H)-one* (3b):

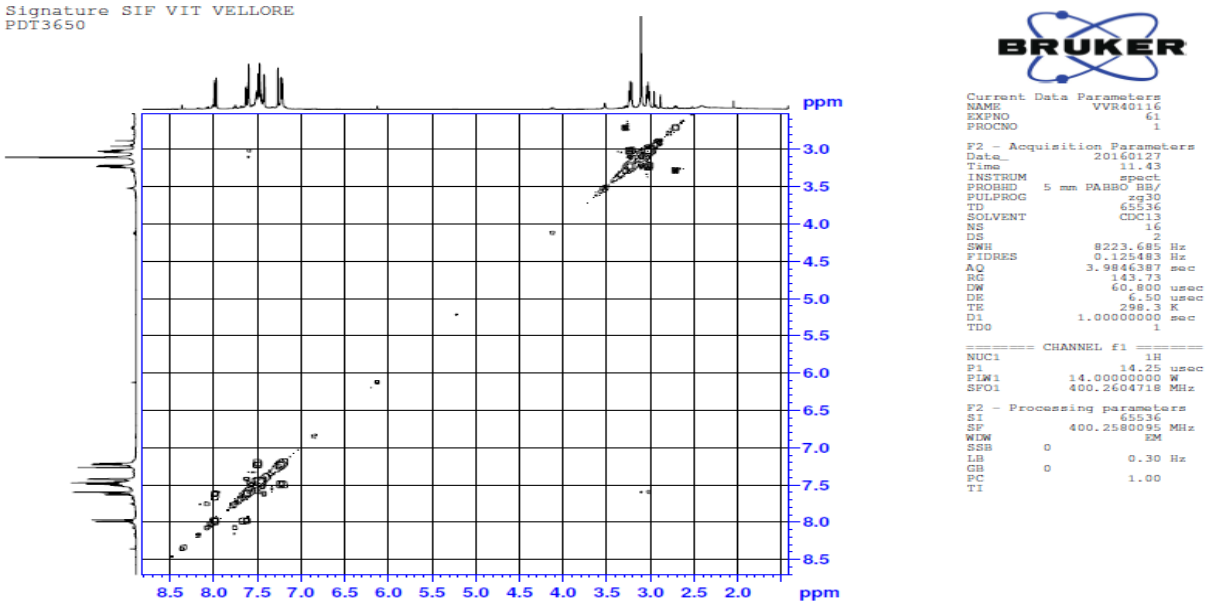

Figure 30: H-H COSY spectrum of *(E)-7-chloro-2-((dimethylamino)methylene)-3,4-dihydro-9*-phenylacridin-1(2H)-one (3b):

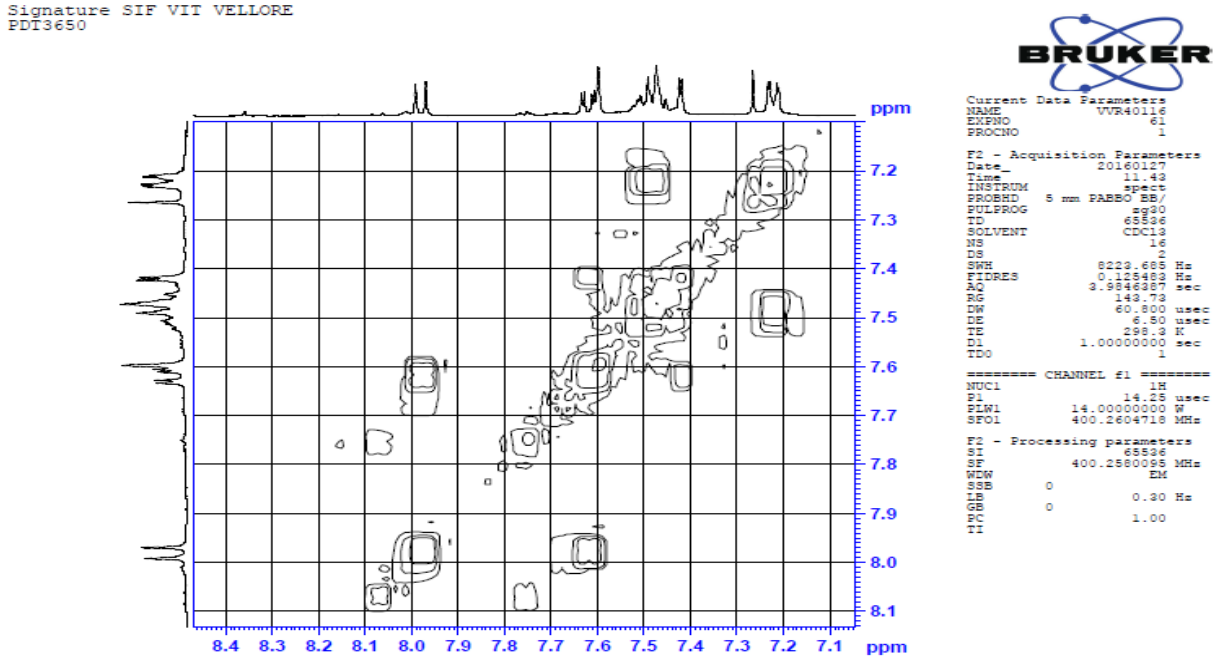

Figure 31: Enlarged H-H COSY spectrum of *(E)-7-chloro-2-((dimethylamino)methylene)-3,4-dihydro-9*-phenylacridin-1(2H)-one (3b):

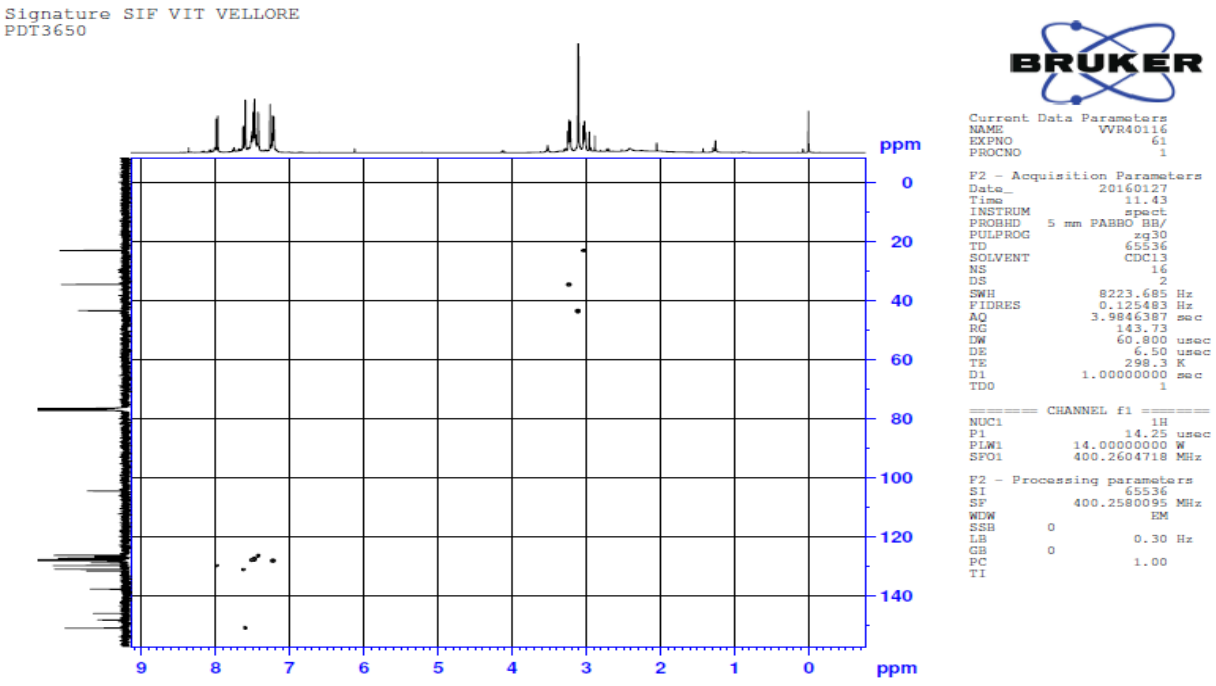

Figure 32: HSQC spectrum of *(E)-7-chloro-2-((dimethylamino)methylene)-3,4-dihydro-9-phenylacridin-1(2H)-one* (3b):

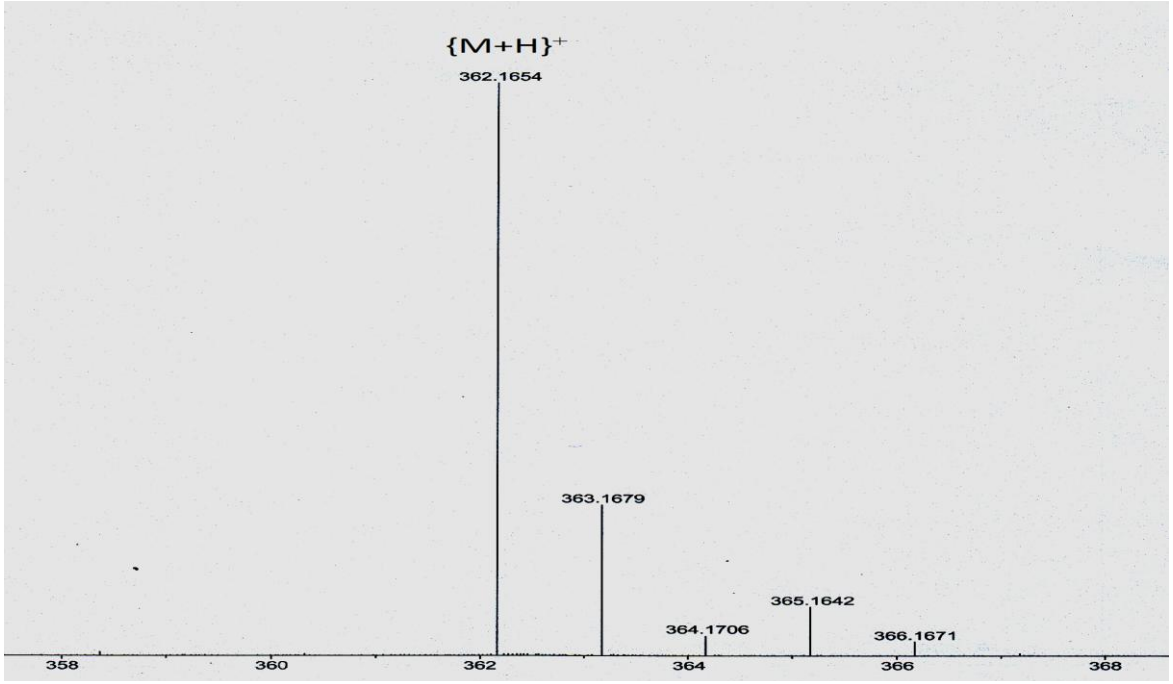

Figure 33: HRMS of *(E)-7-chloro-2-((dimethylamino)methylene)-3,4-dihydro-9-phenylacridin-1(2H)-one*(3b):

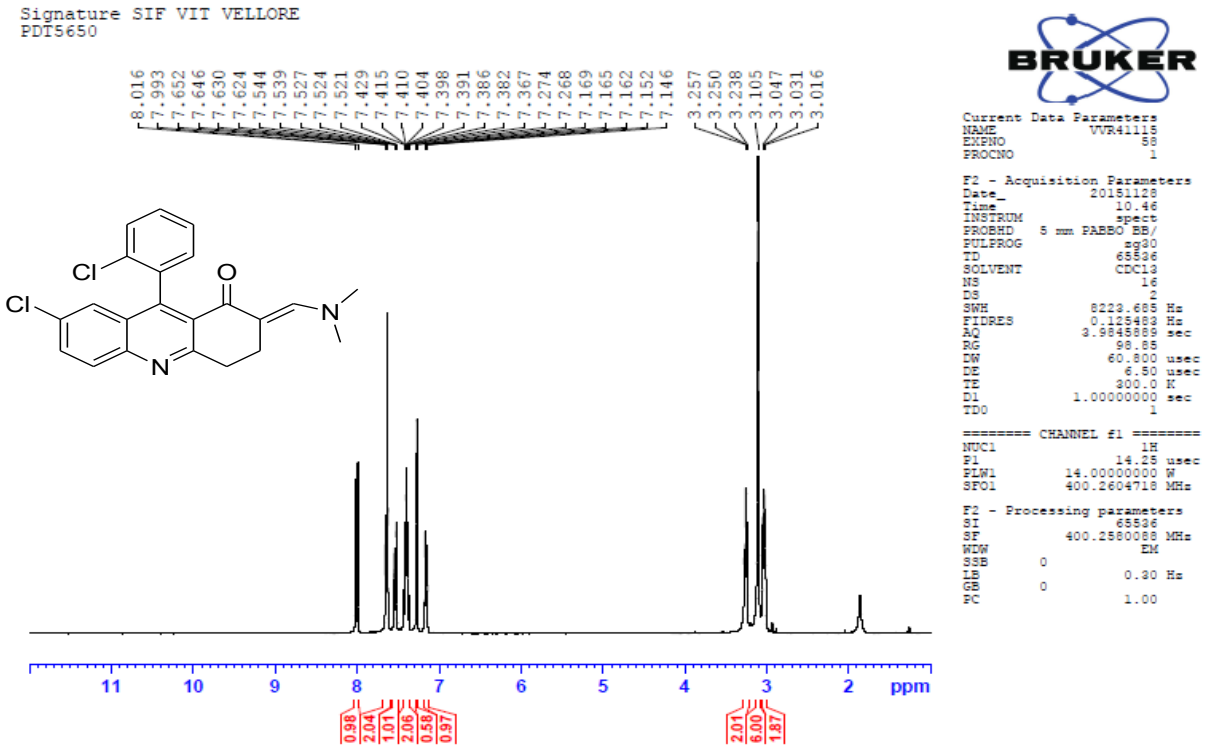

Figure 34: ^{1}H NMR spectrum of *(E)-7-chloro-9-(2-chlorophenyl)-2-((dimethylamino)methylene)-3,4-dihydroacridin-1(2H)-one* (3c):

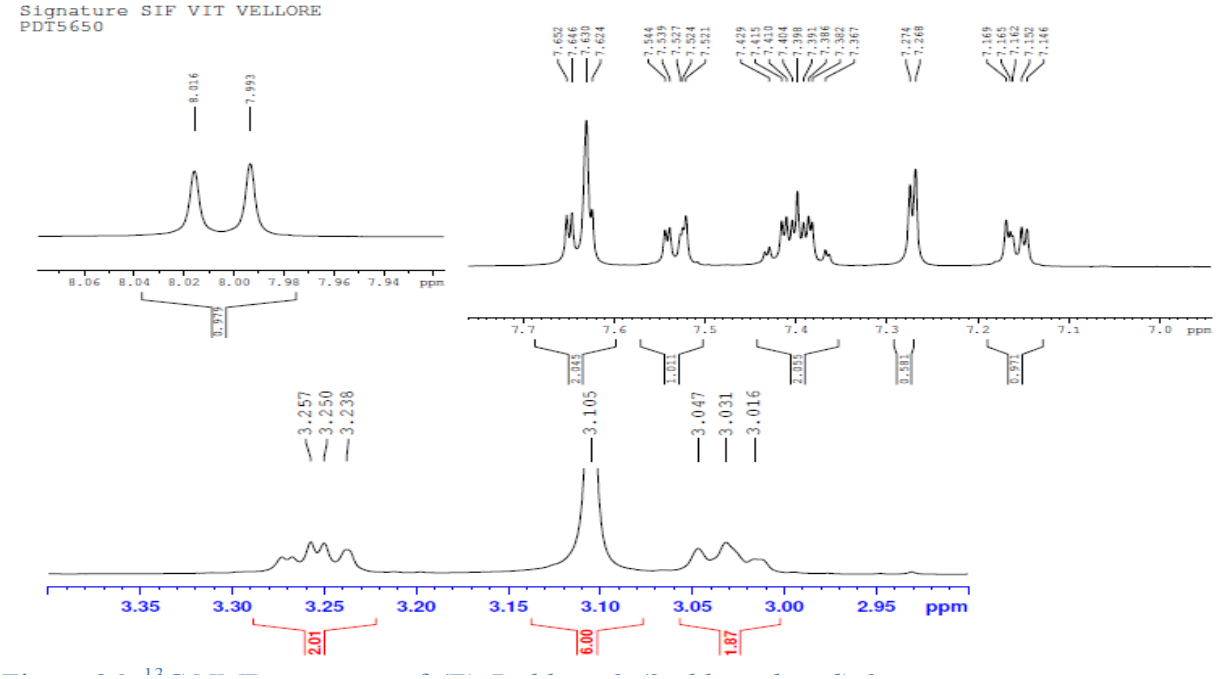

Figure 35: Enlarged ^{1}H NMR spectrum of *(E)-7-chloro-9-(2-chlorophenyl)-2((dimethylamino)methylene)-3,4-dihydroacridin-1(2H)-one* (3c):

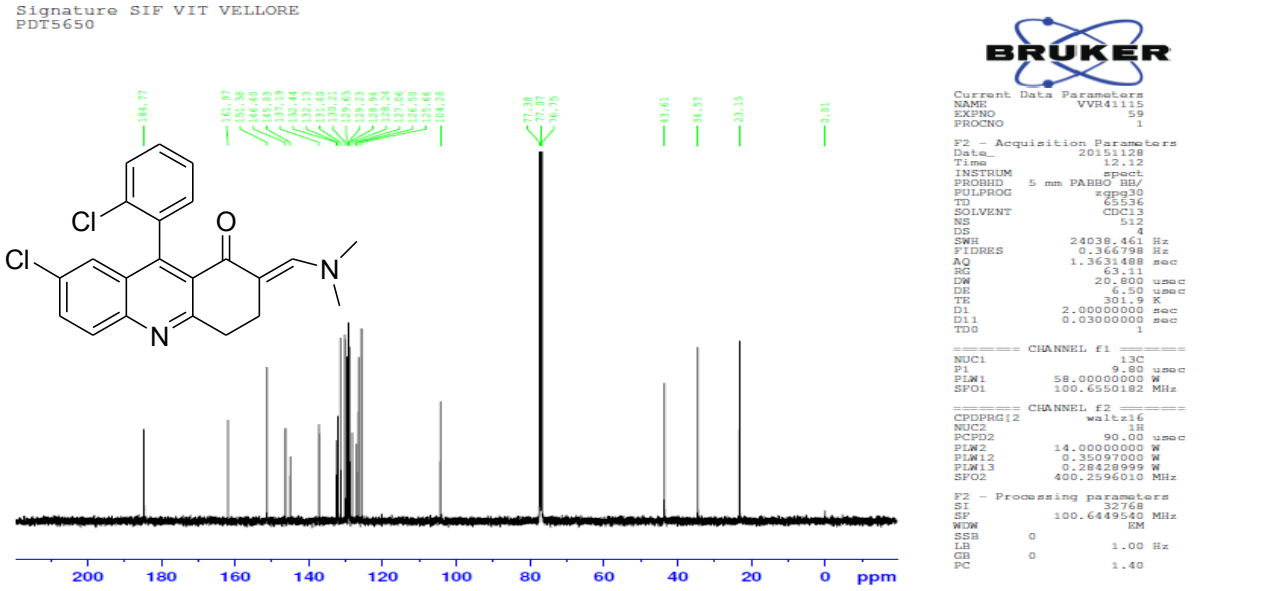

Figure 36: ^{13}C NMR spectrum of *(E)-7-chloro-9-(2-chlorophenyl)-2-((dimethylamino)methylene)-3,4-dihydroacridin-1(2H)-one* (3c):

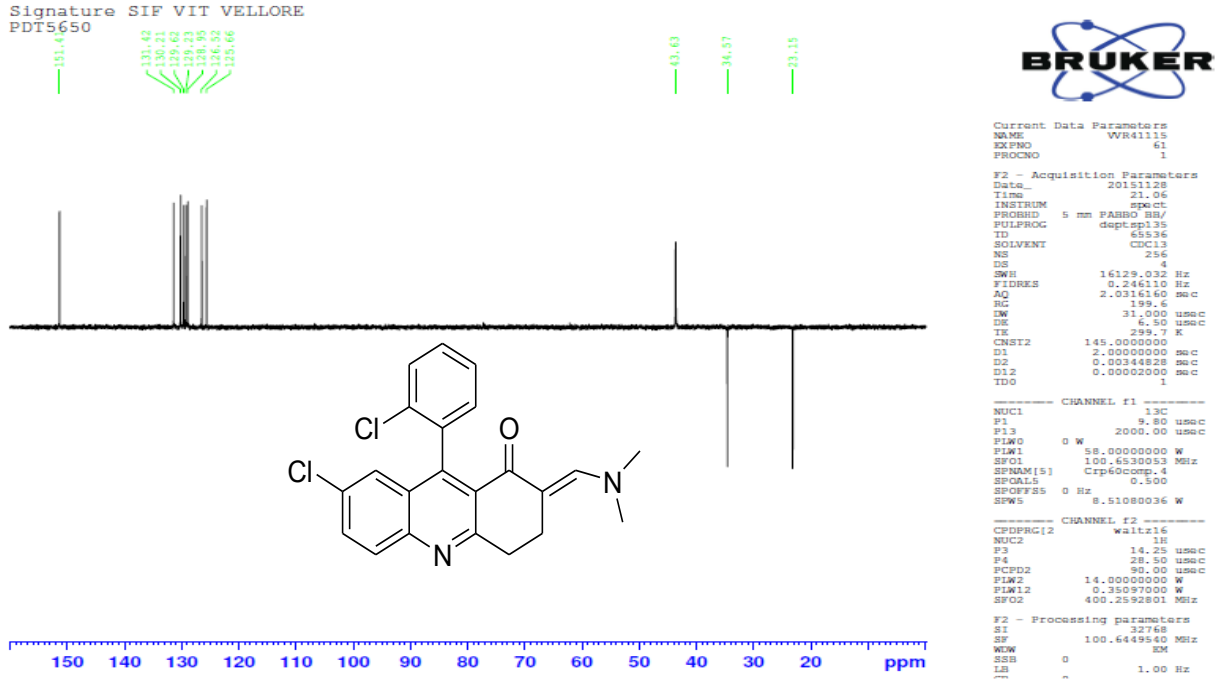

Figure 37: DEPT-135 spectrum of *(E)-7-chloro-9-(2-chlorophenyl)-2-((dimethylamino)methylene)-3,4-dihydroacridin-1(2H)-one* (3c):

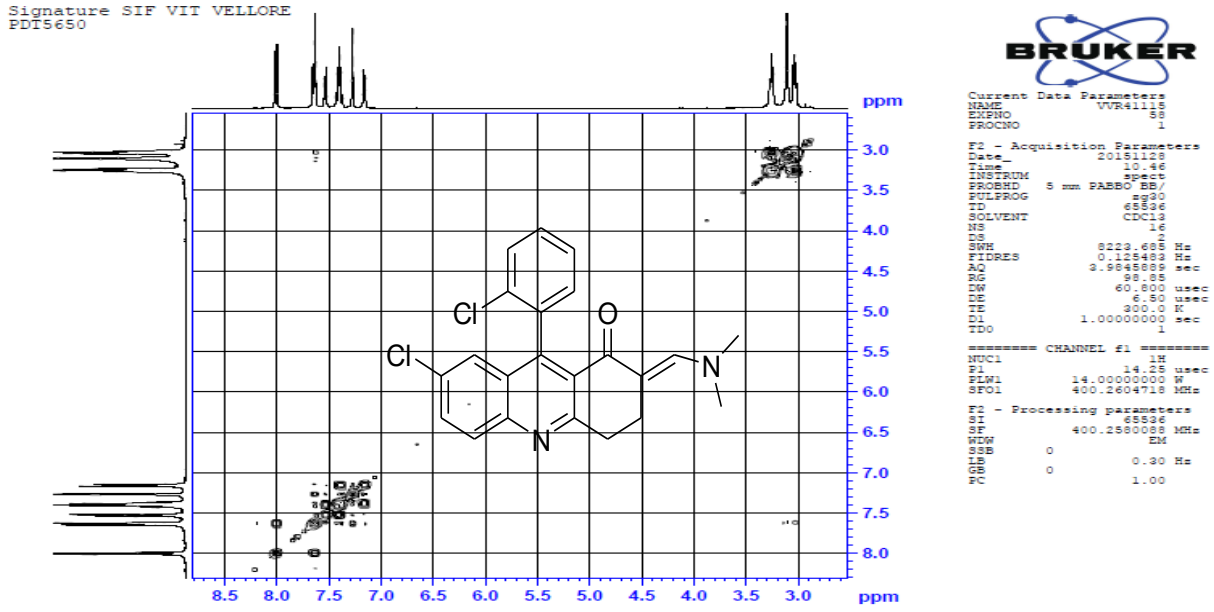

Figure 38: H-H COSY spectrum of *(E)-7-chloro-9-(2-chlorophenyl)-2-((dimethylamino)methylene)-3,4-dihydroacridin-1(2H)-one* (3c):

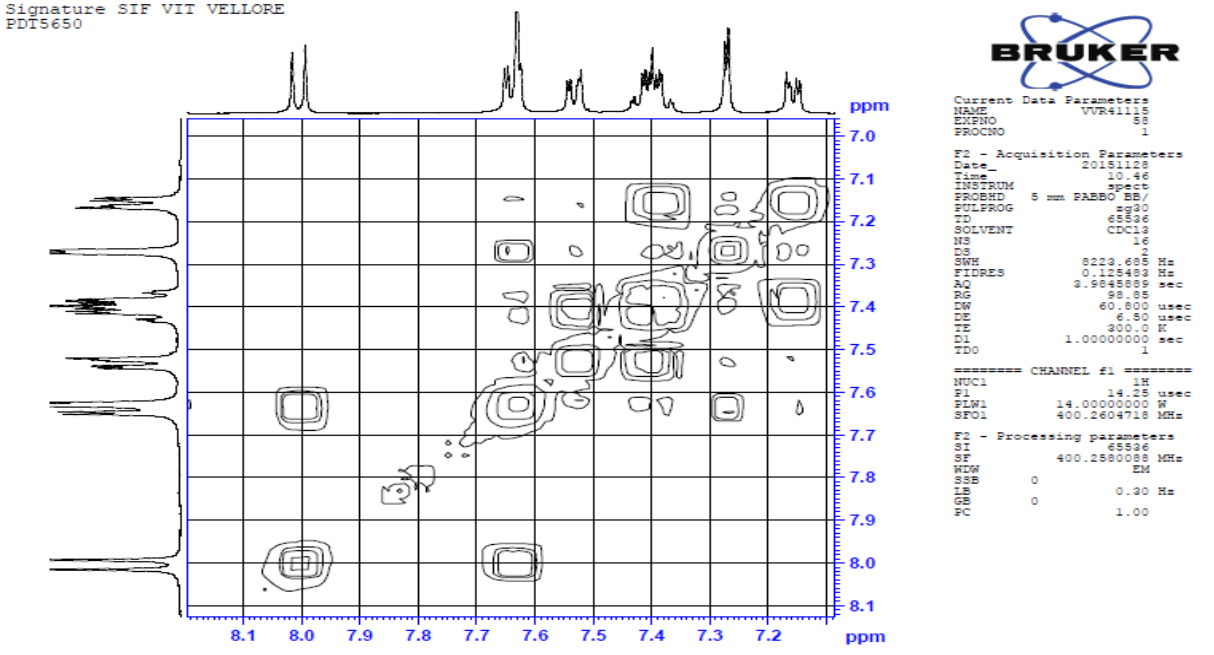

Figure 39: Enlarged H-H COSY spectrum of *(E)-7-chloro-9-(2-chlorophenyl)-2-((dimethylamino)methylene)-3,4-dihydroacridin-1(2H)-one* (3c):

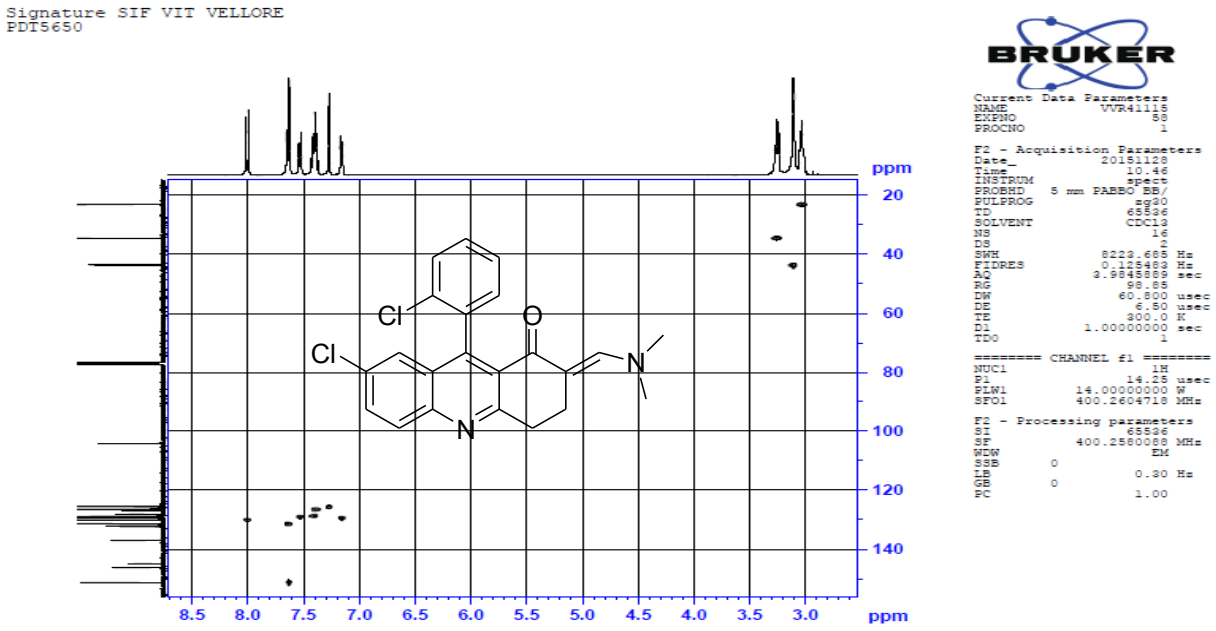

Figure 40: HSQC spectrum of *(E)-7-chloro-9-(2-chlorophenyl)-2-((dimethylamino)methylene)-3,4-dihydroacridin-1(2H)-one* (3c):

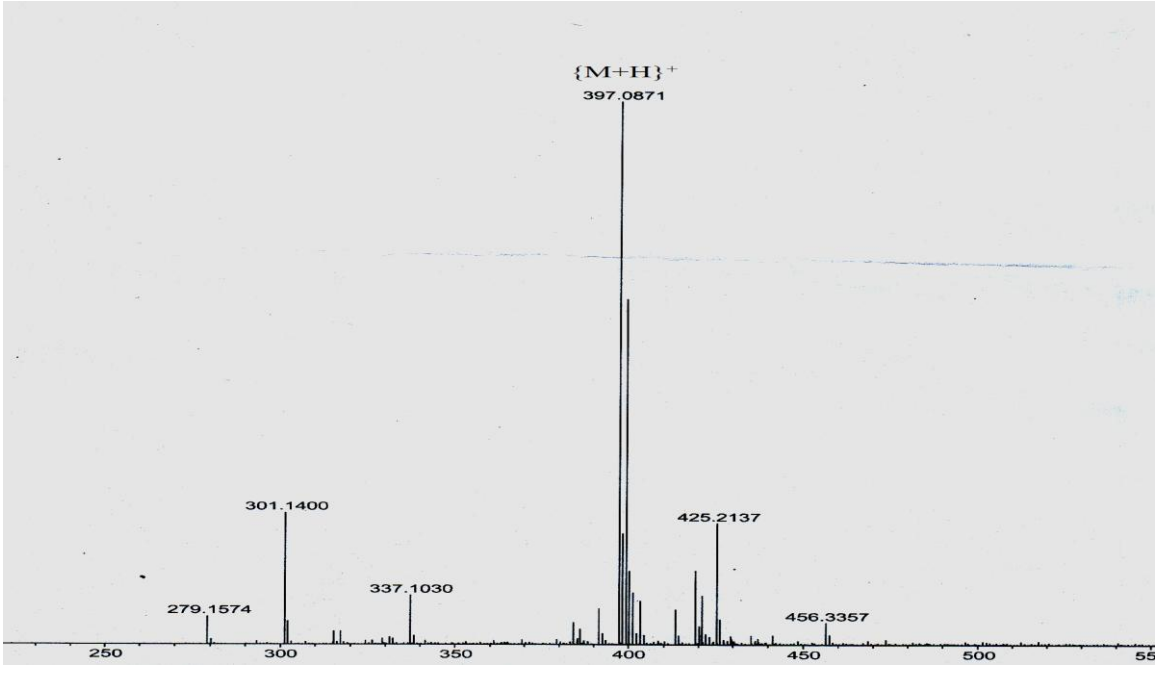

Figure 41: HRMS of *(E)-7-chloro-9-(2-chlorophenyl)-2-((dimethylamino)methylene)-3,4-dihydroacridin-1(2H)-one*(3c):

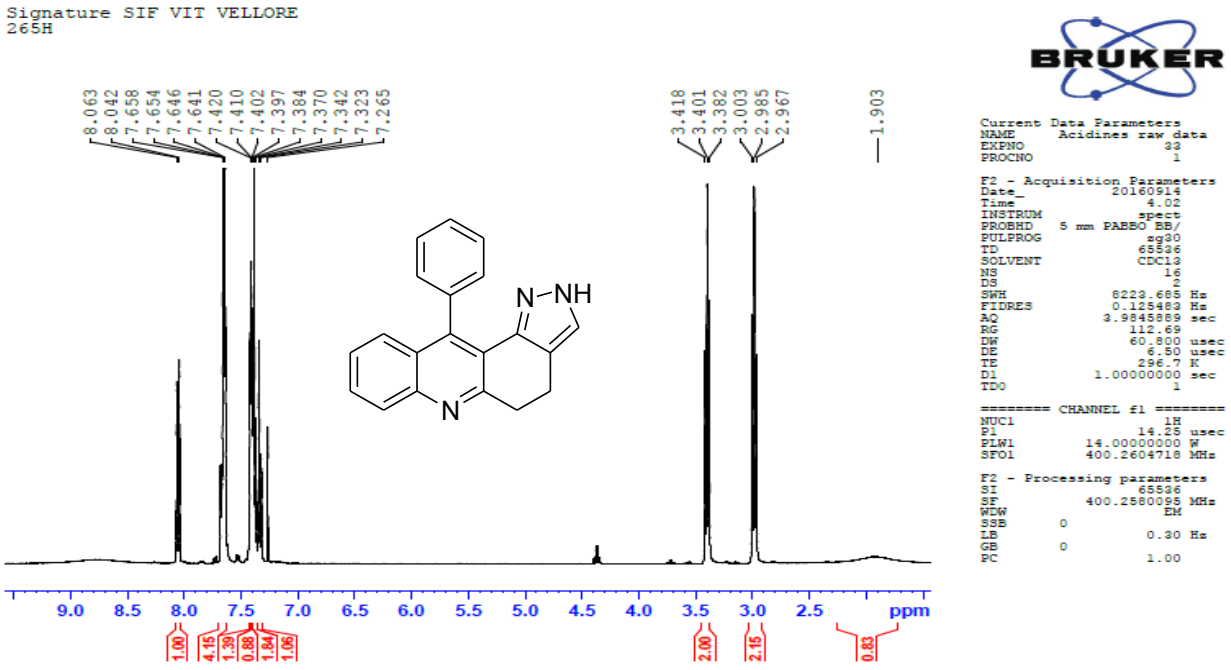

Figure 42: ^{1}H NMR spectrum of *4,5-dihydro-11-phenyl-2H-pyrazolo[3,4-a]acridine* (4a):

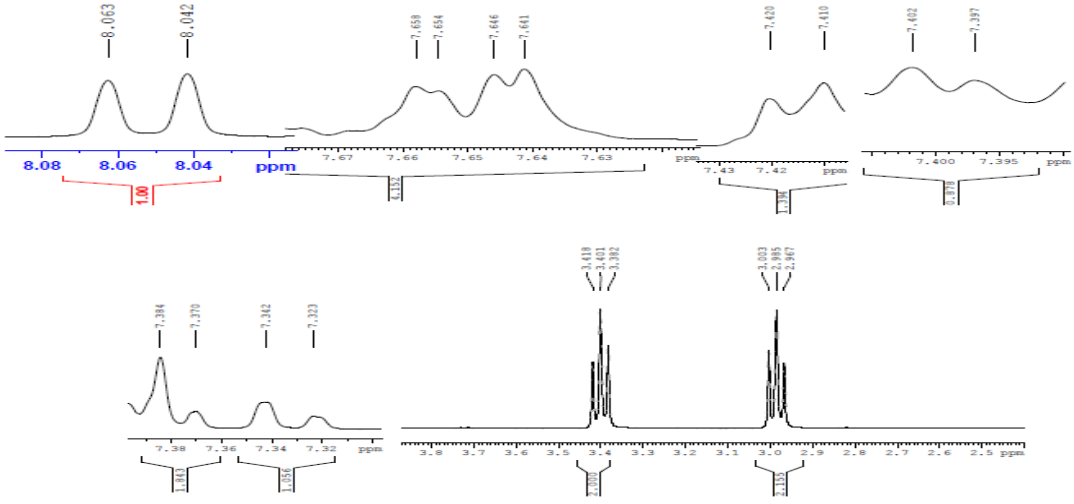

Figure 43: Enlarged ^{1}H NMR spectrum of *4,5-dihydro-11-phenyl-2H-pyrazolo[3,4-a]Acridine* (4a):

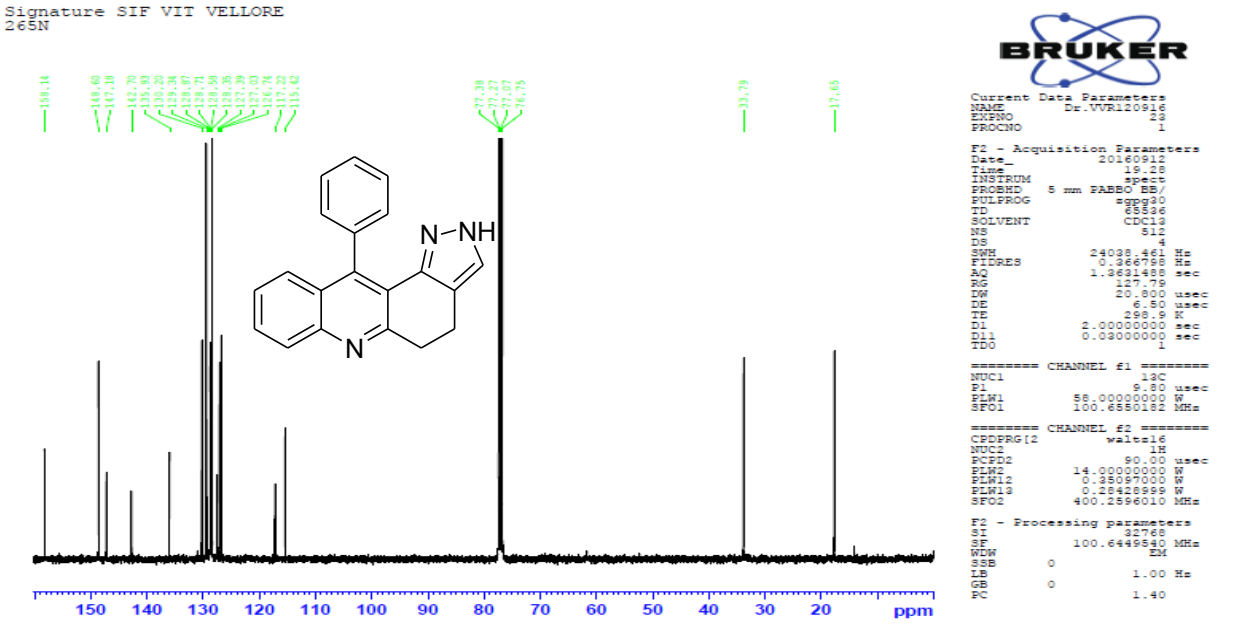

Figure 44: ^{13}C NMR spectrum of *4,5-dihydro-11-phenyl-2H-pyrazolo[3,4-a]acridine*(4a):

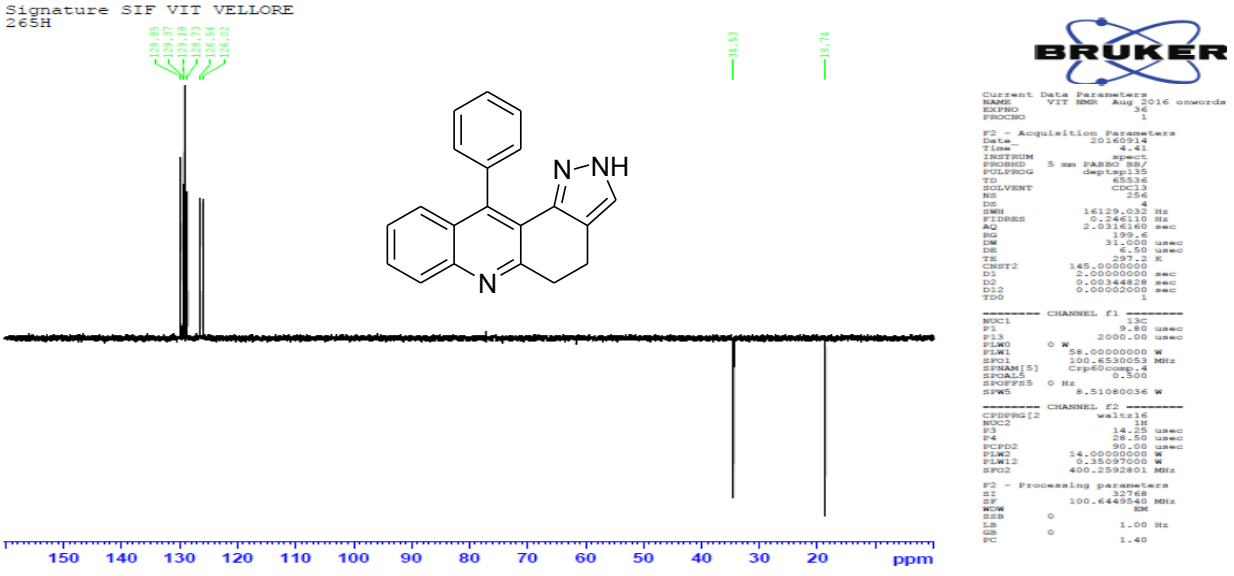

Figure 45: DEPT-135 spectrum of *4,5-dihydro-11-phenyl-2H-pyrazolo[3,4-a]acridine* (4a):

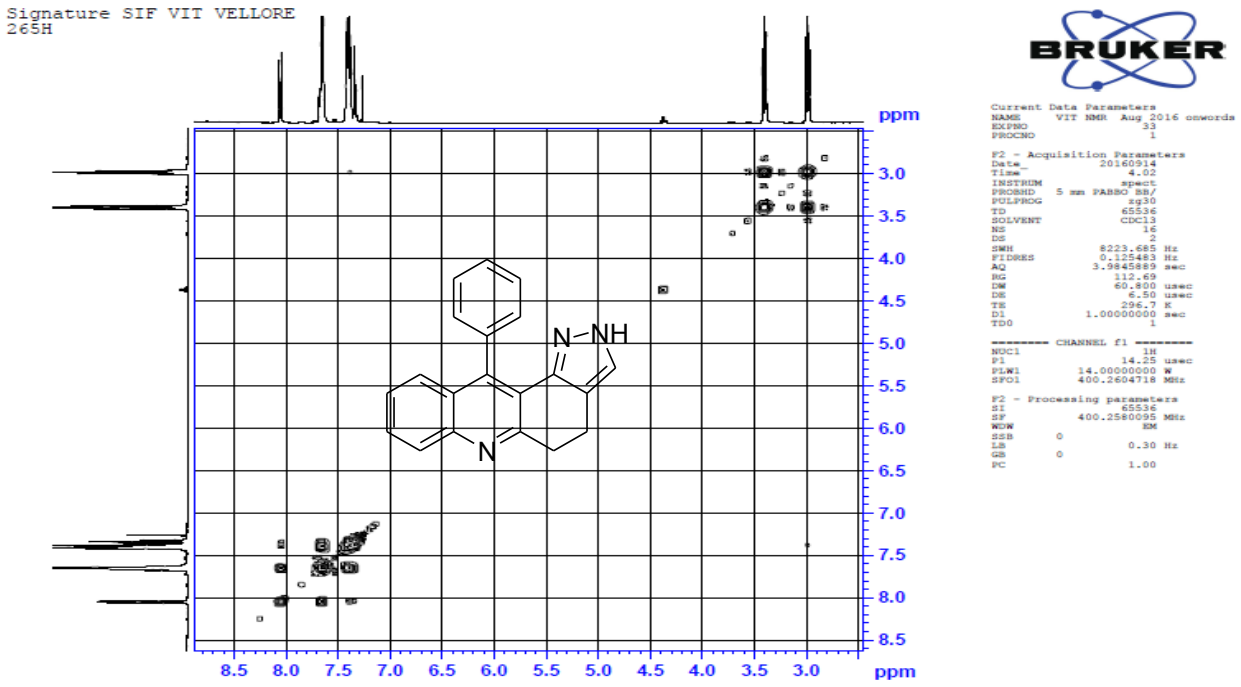

Figure 46: H-H COSY spectrum of *4,5-dihydro-11-phenyl-2H-pyrazolo[3,4-a]acridine* (4a):

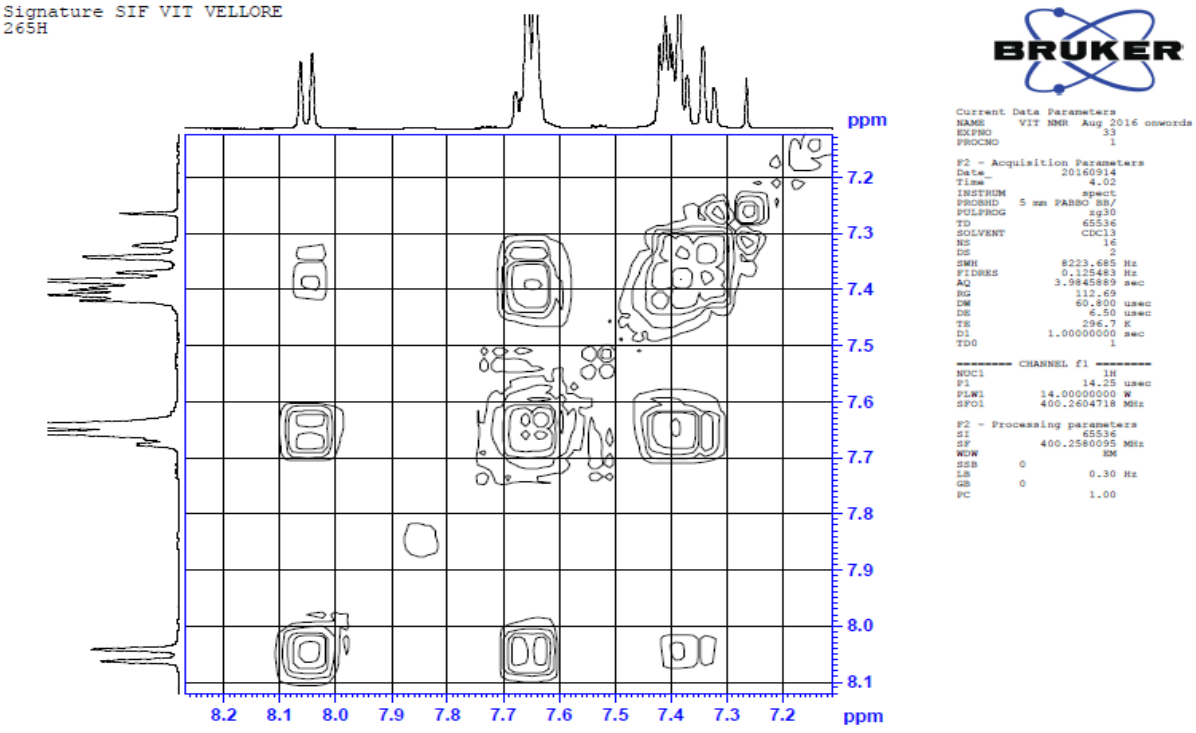

Figure 47: Enlarged H-H COSY spectrum of *4,5-dihydro-11-phenyl-2H-pyrazolo[3,4-a]acridine* (4a):

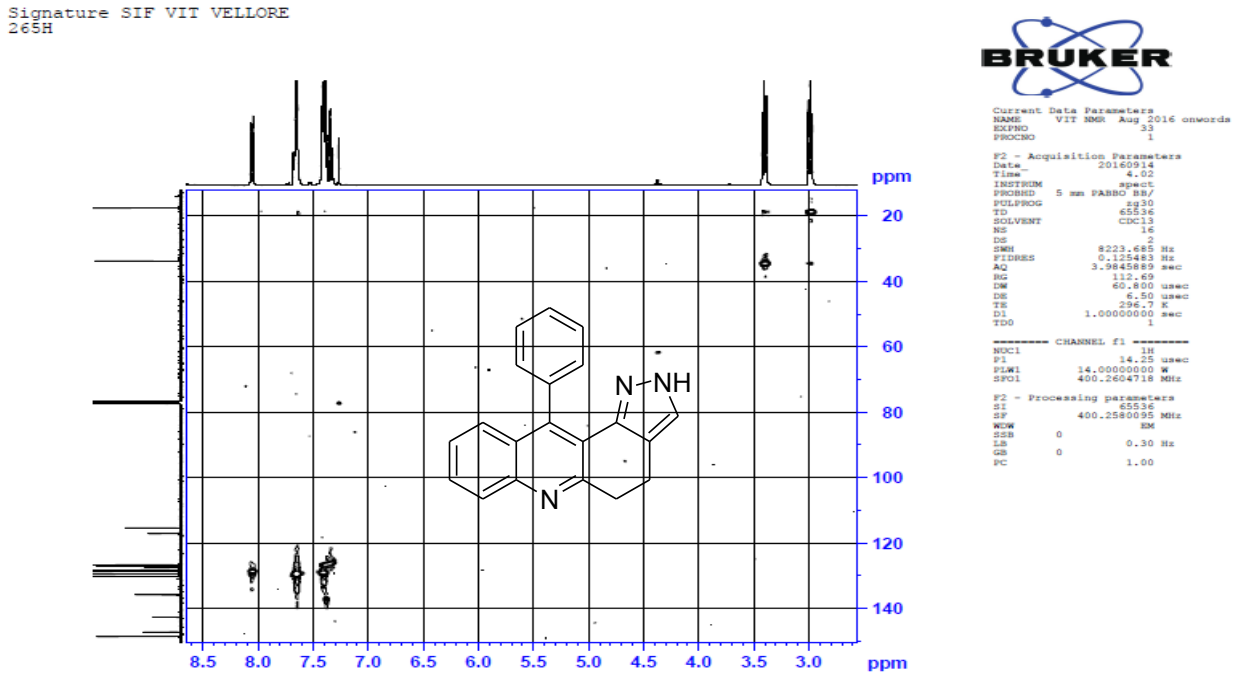

Figure 48: HSQC spectrum of *4,5-dihydro-11-phenyl-2H-pyrazolo[3,4-a]acridine* (4a):

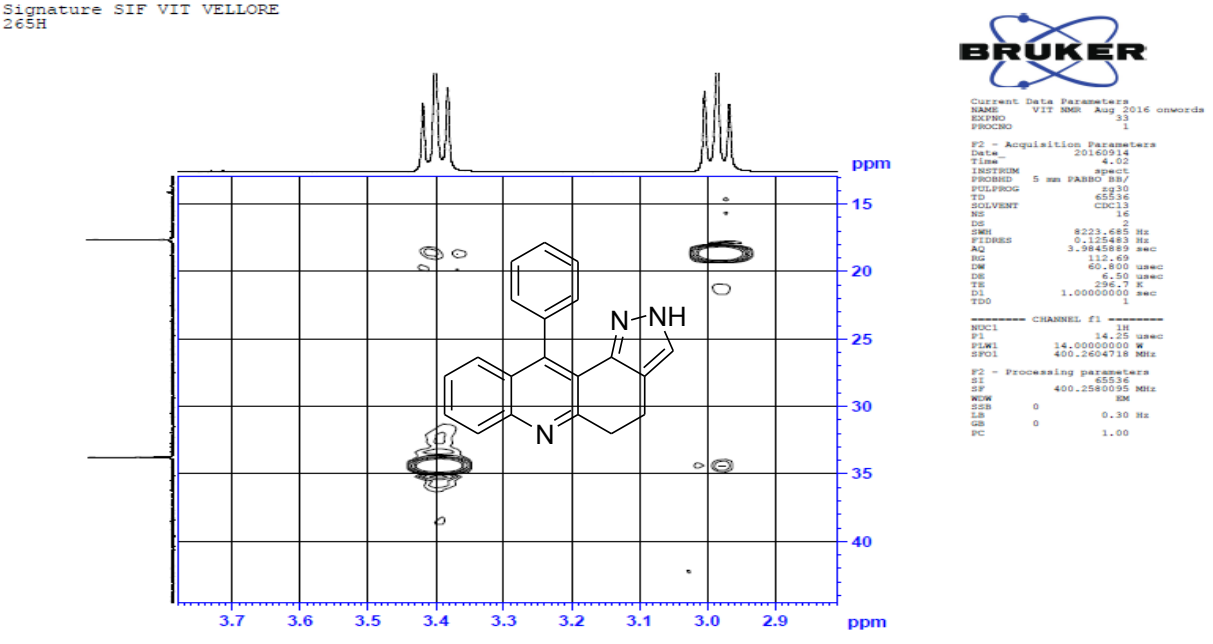

Figure 49: Enlarged HSQC spectrum of *4,5-dihydro-11-phenyl-2H-pyrazolo[3,4-a]acridine* (4a):

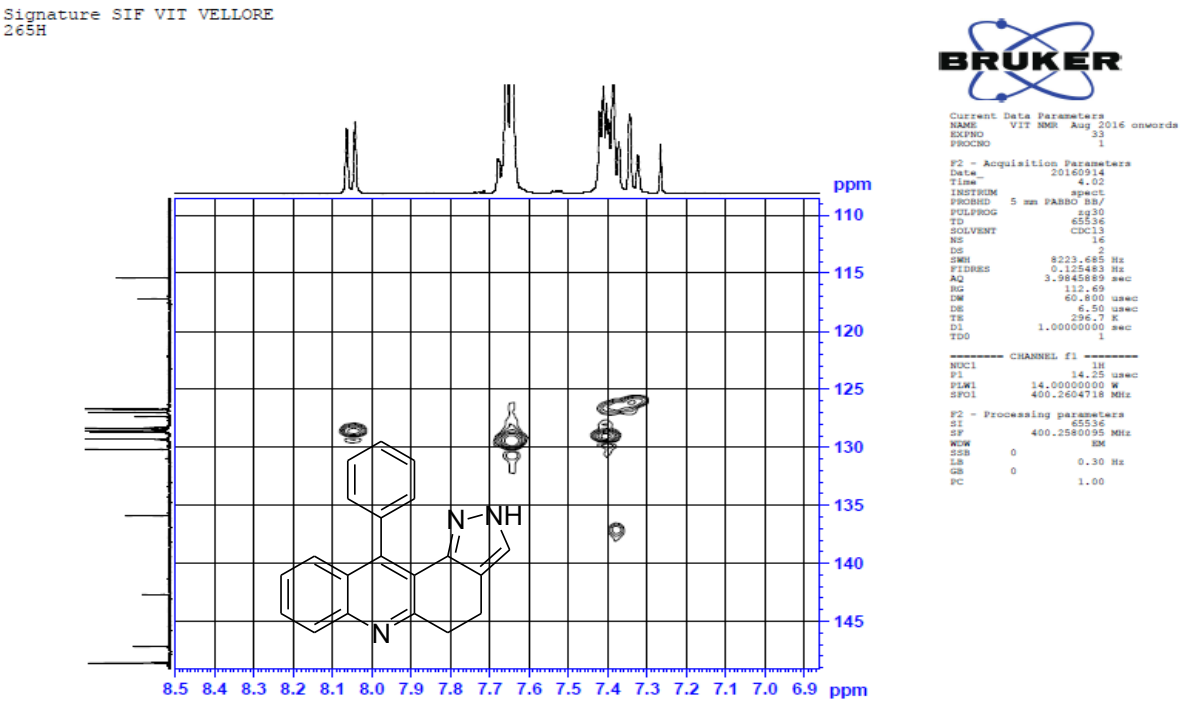

Figure 50: Enlarged HSQC spectrum of *4,5-dihydro-11-phenyl-2H-pyrazolo[3,4-a]acridine* (4a):

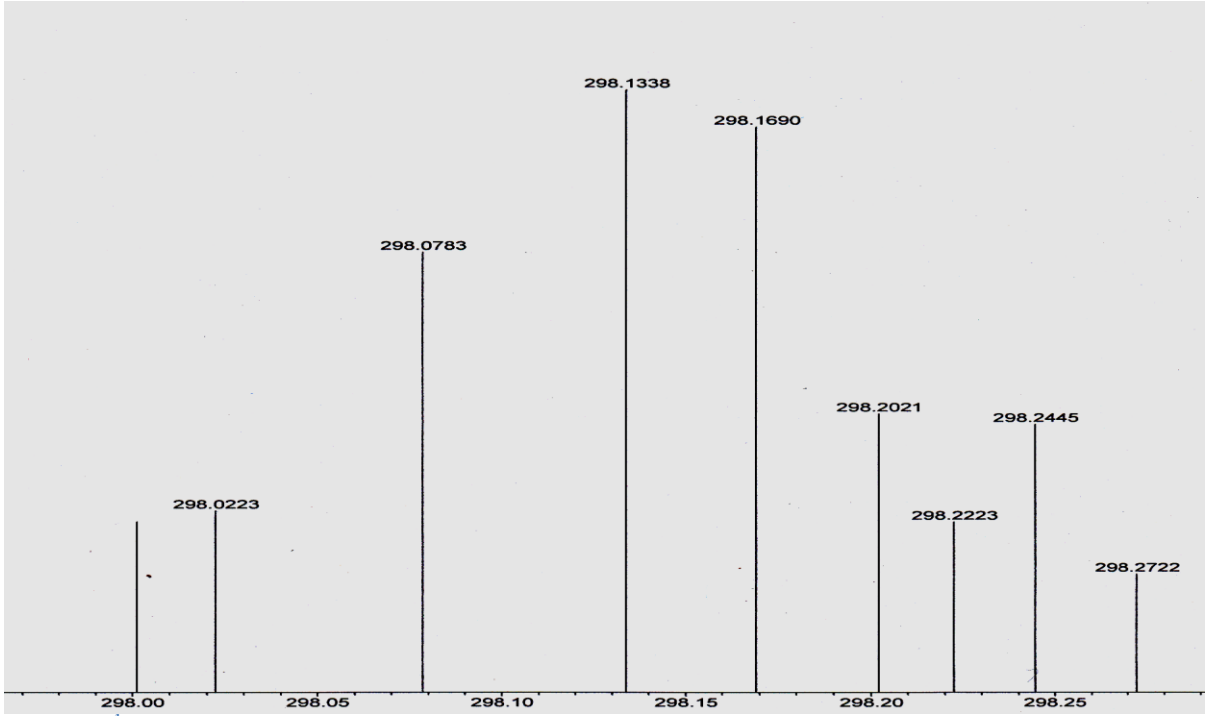

Figure 51: HRMS of *4,5-dihydro-11-phenyl-2H-pyrazolo[3,4-a]acridine* (4a):

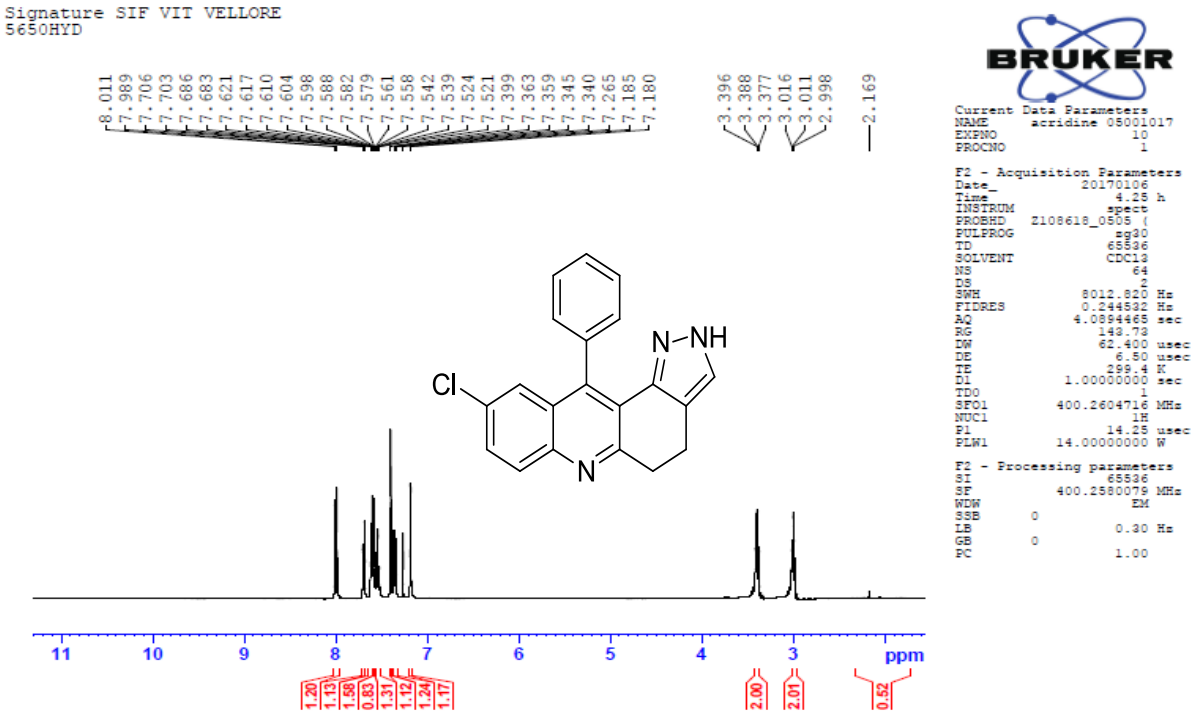

Figure 52: ^{1}H NMR spectrum of *9-chloro-4,5-dihydro-11-phenyl-1H-pyrazolo[3,4-a]acridine* (4b):

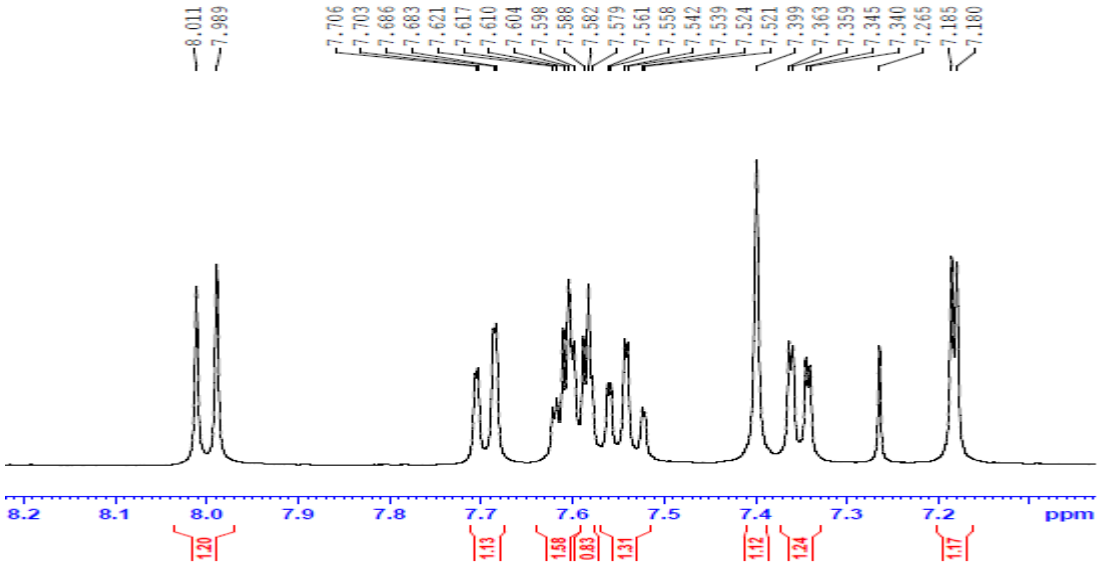

Figure 53: Enlarged ^{1}H NMR spectrum of *9-chloro-4,5-dihydro-11-phenyl-1H-pyrazolo[3,4-a]acridine* (4b):

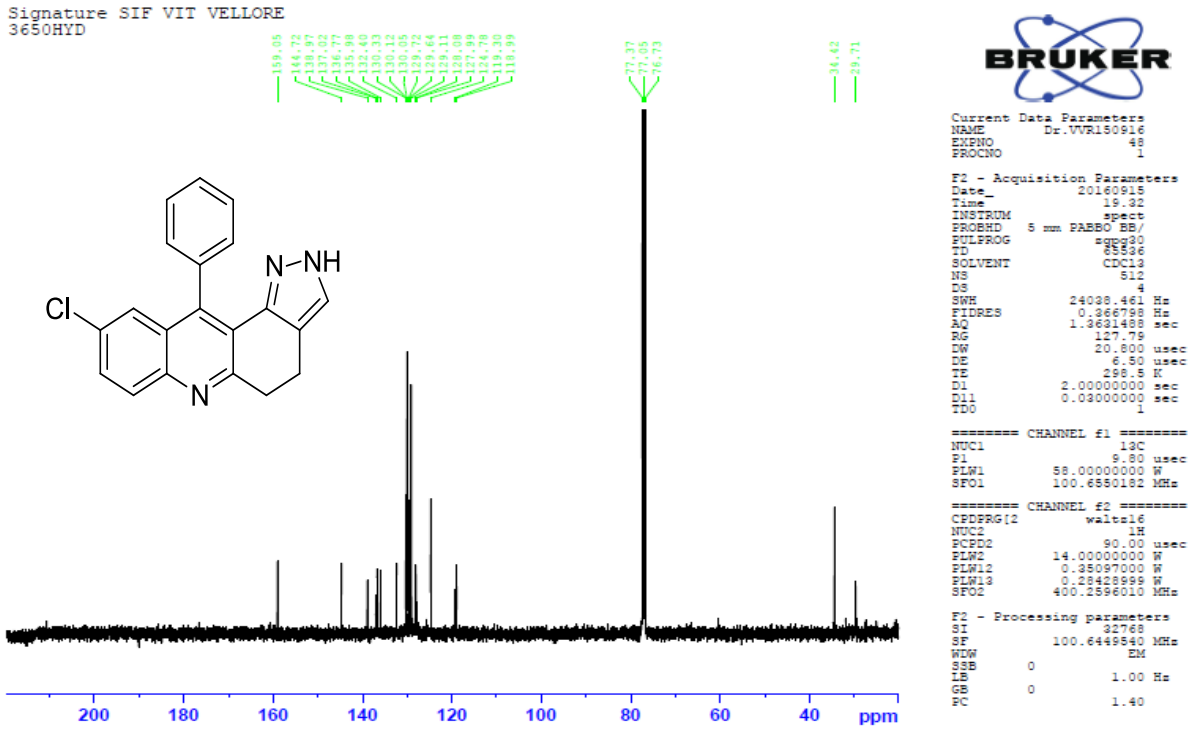

Figure 54: ^{13}C NMR spectrum of *9-chloro-4,5-dihydro-11-phenyl-1H-pyrazolo[3,4-a]acridine* (4b):

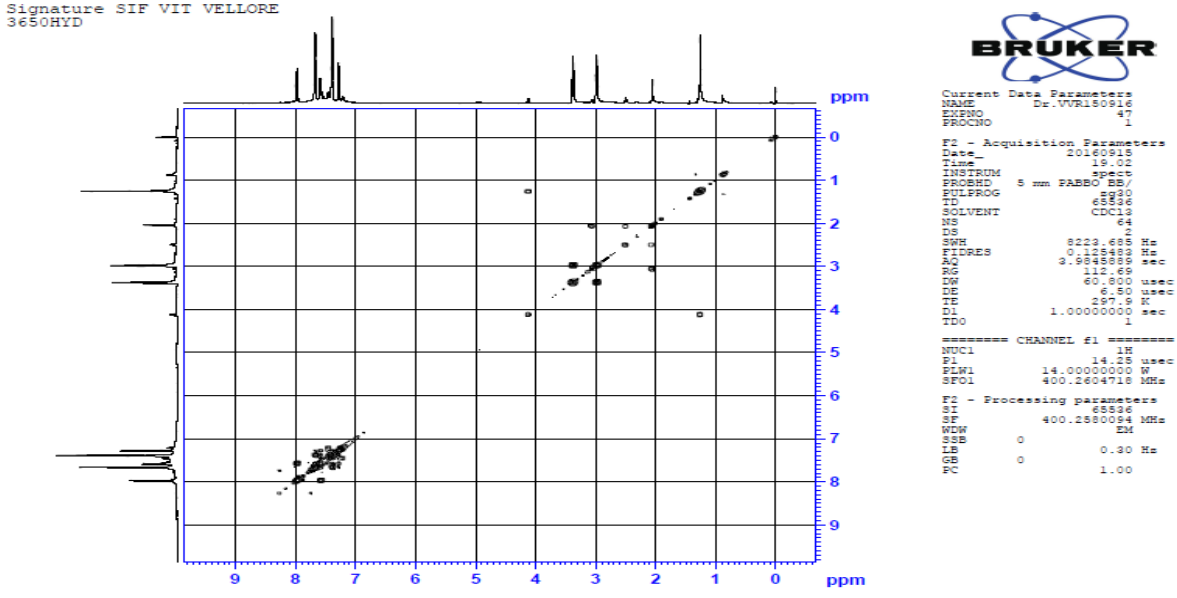

Figure 55: H-H COSY spectrum of *9-chloro-4,5-dihydro-11-phenyl-1H-pyrazolo[3,4-a]acridine* (4b):

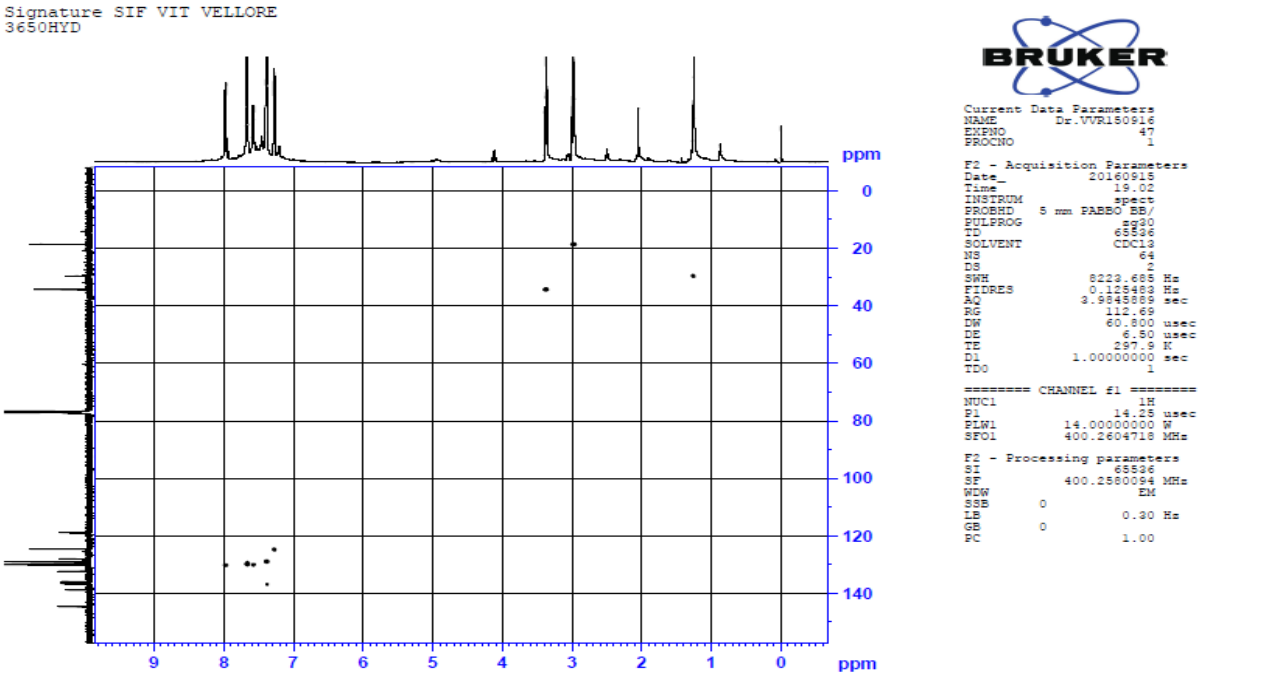

Figure 56: HSQC spectrum of *9-chloro-4,5-dihydro-11-phenyl-1H-pyrazolo[3,4-a]acridine* (4b):

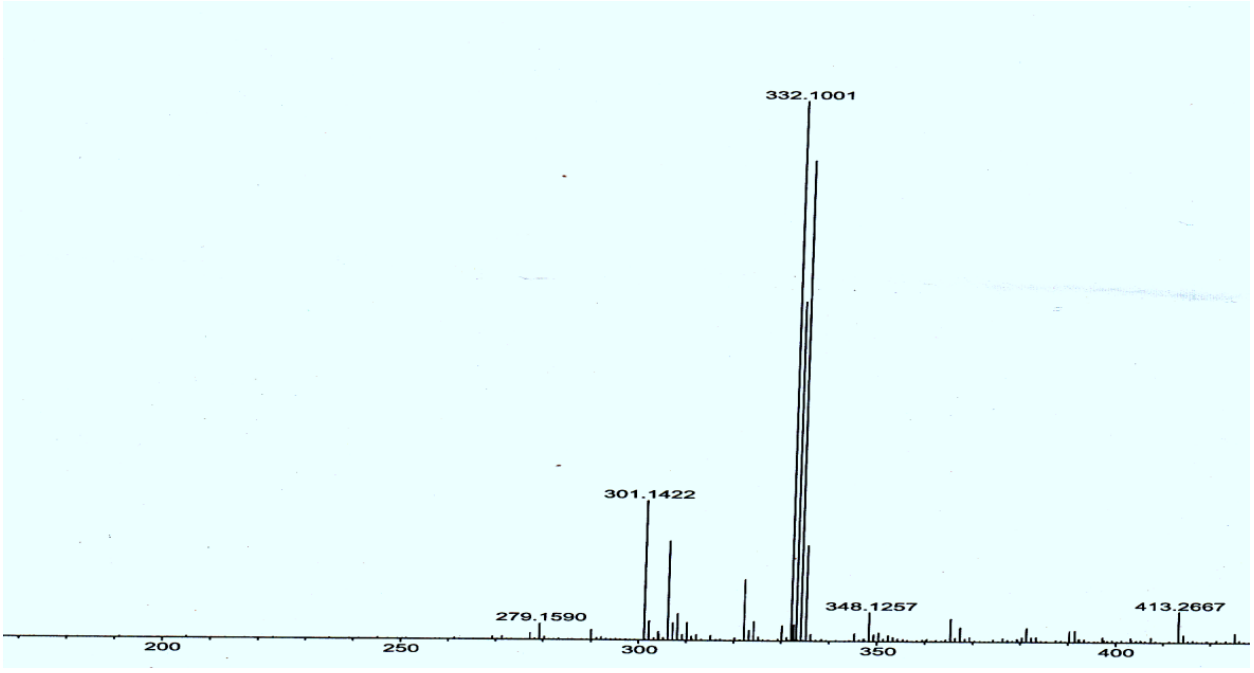

Figure 57: HRMS of *9-chloro-4,5-dihydro-11-phenyl-1H-pyrazolo[3,4-a]acridine* (4b):

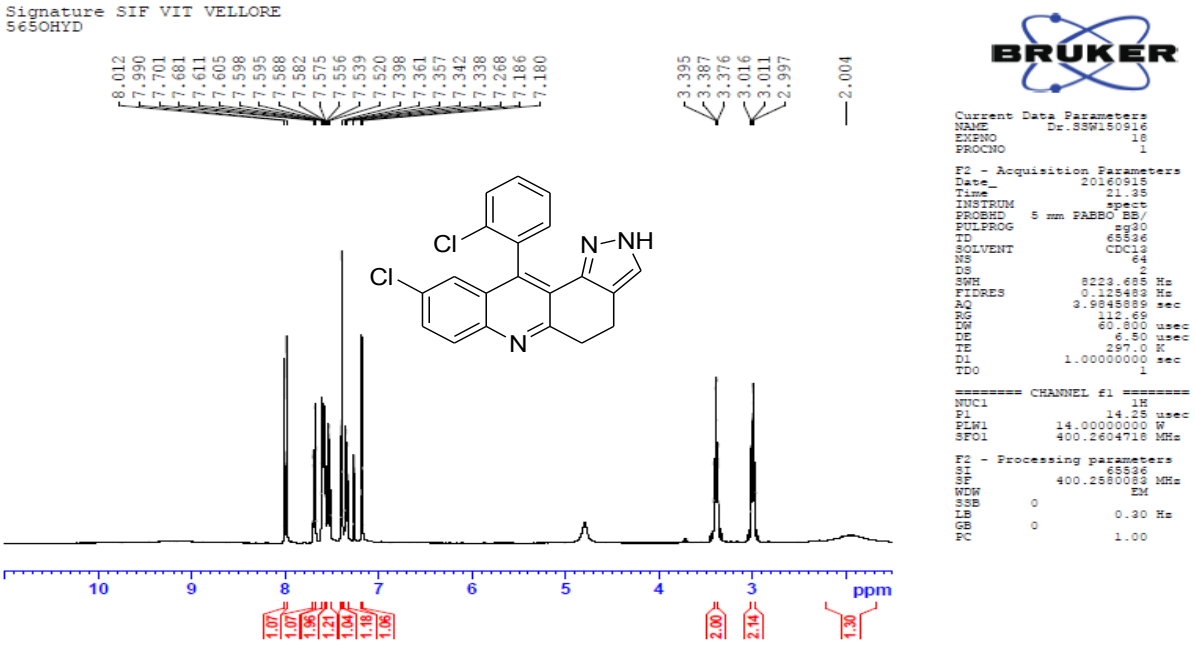

Figure 58: ^{1}H NMR spectrum of *9-chloro-11-(2-chlorophenyl)-4,5-dihydro-1H-pyrazolo[3,4-a]acridine* (4c):

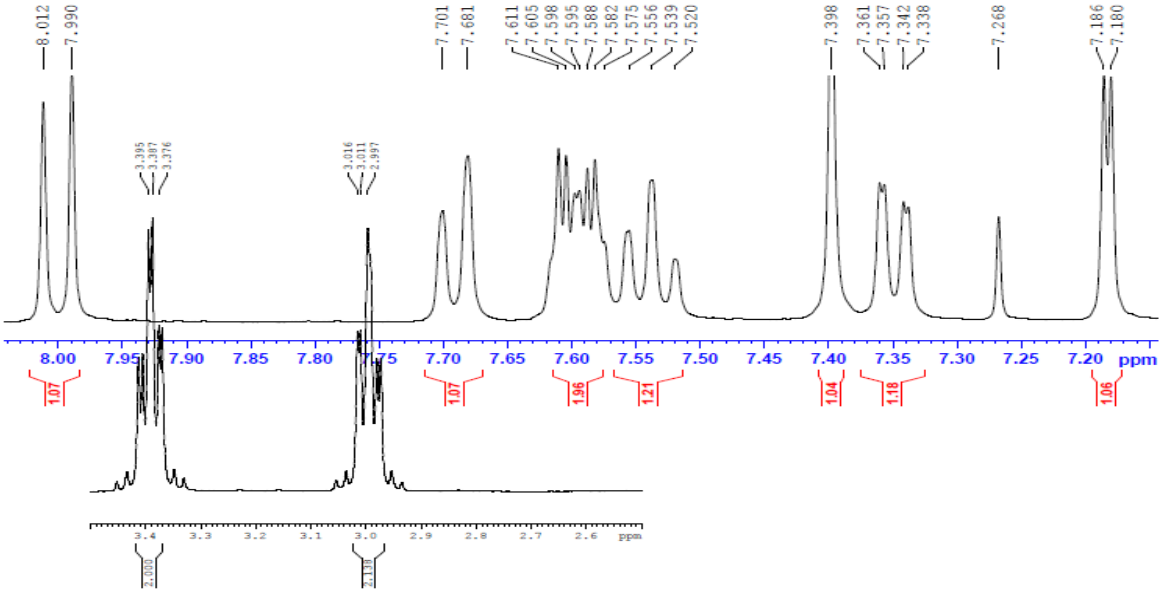

Figure 59: Enlarged ^{1}H NMR spectrum of *9-chloro-11-(2-chlorophenyl)-4,5-dihydro-1H-pyrazolo[3,4-a]acridine* (4c):

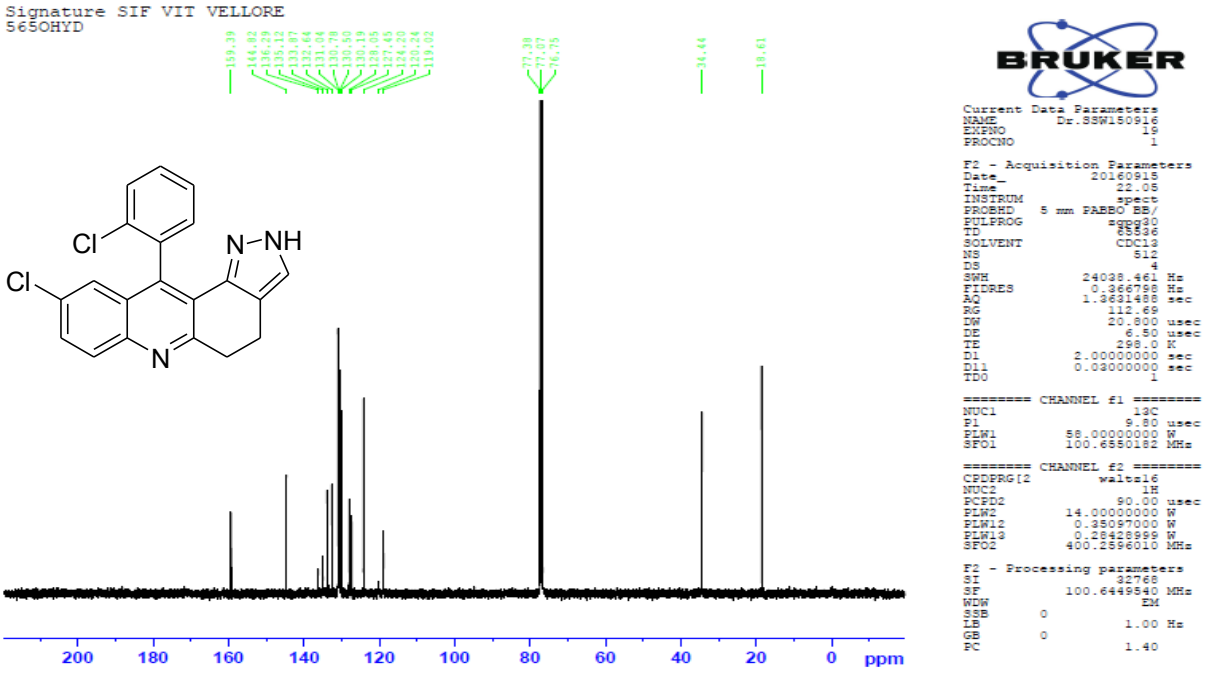

Figure 60: ^{13}C NMR of *9-chloro-11-(2-chlorophenyl)-4,5-dihydro-1H-pyrazolo[3,4-a]acridine* (4c):

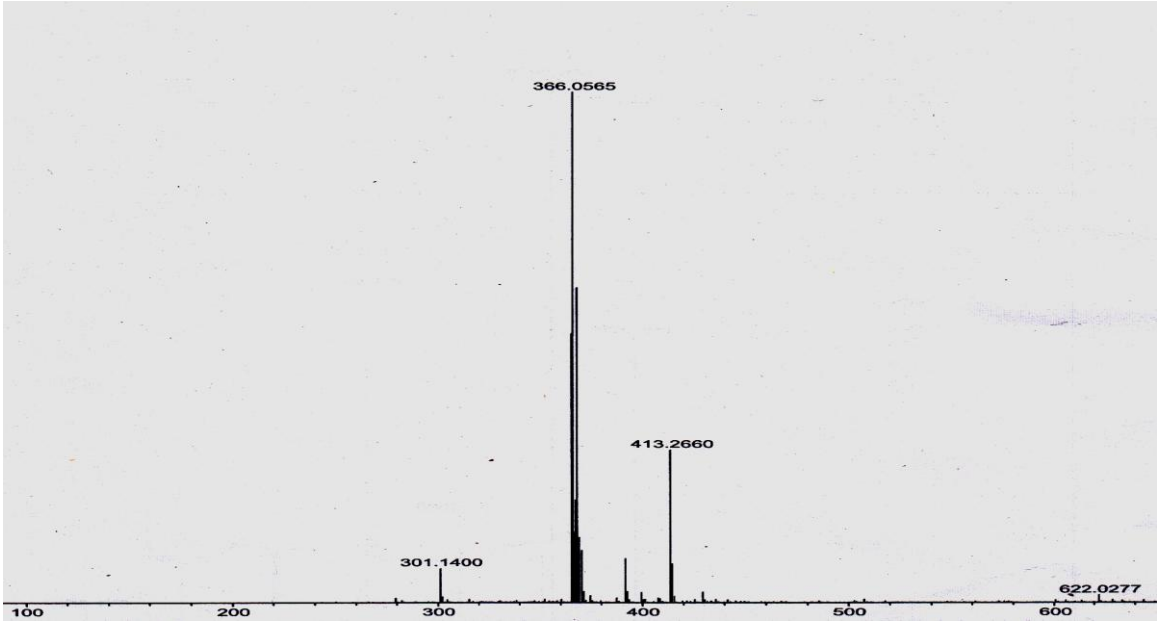

Figure 61: HRMS of *9-chloro-11-(2-chlorophenyl)-4,5-dihydro-1H-pyrazolo[3,4-a]acridine* (4c):

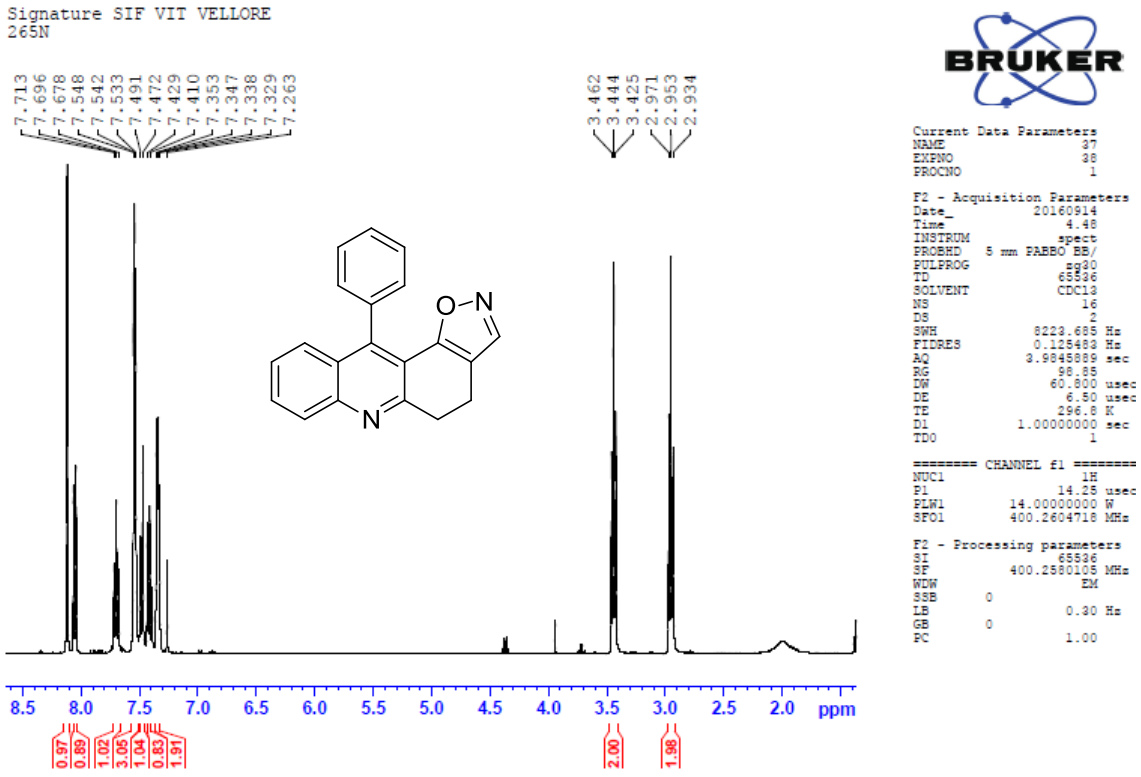

Figure 62: ^{1}H NMR spectrum of *4,5-dihydro-11-phenylisoxazolo[5,4-a]acridine* (5a):

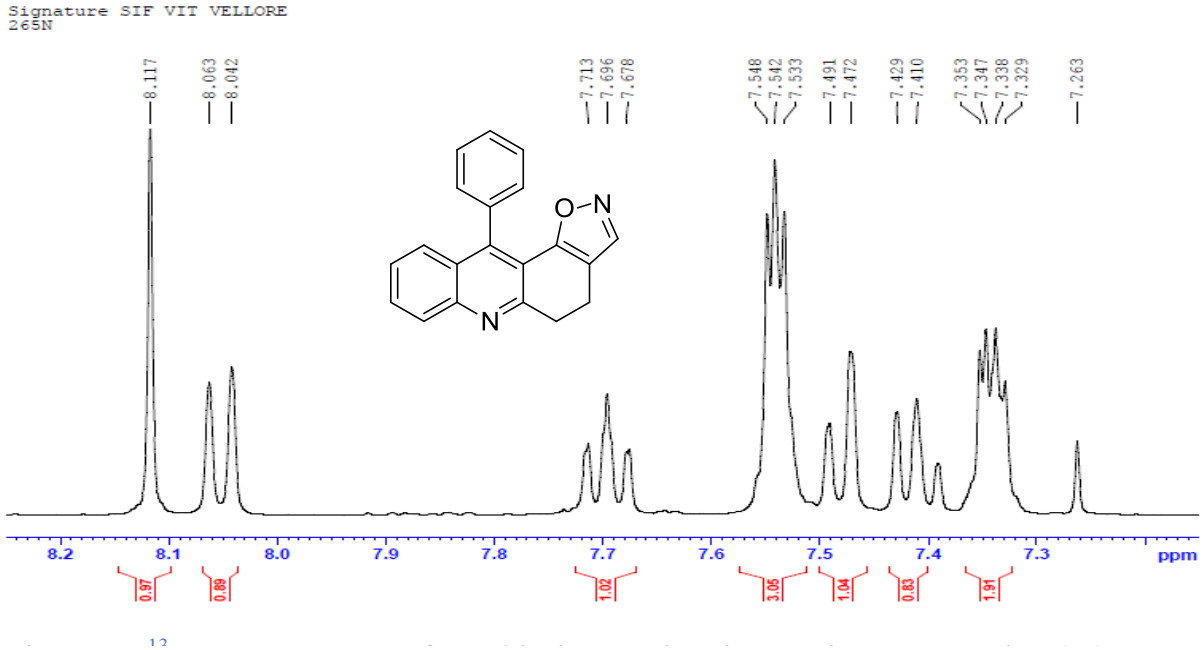

Figure 63: Enlarged ^{1}H NMR spectrum of *4,5-dihydro-11-phenylisoxazolo[5,4-a]acridine* (5a):

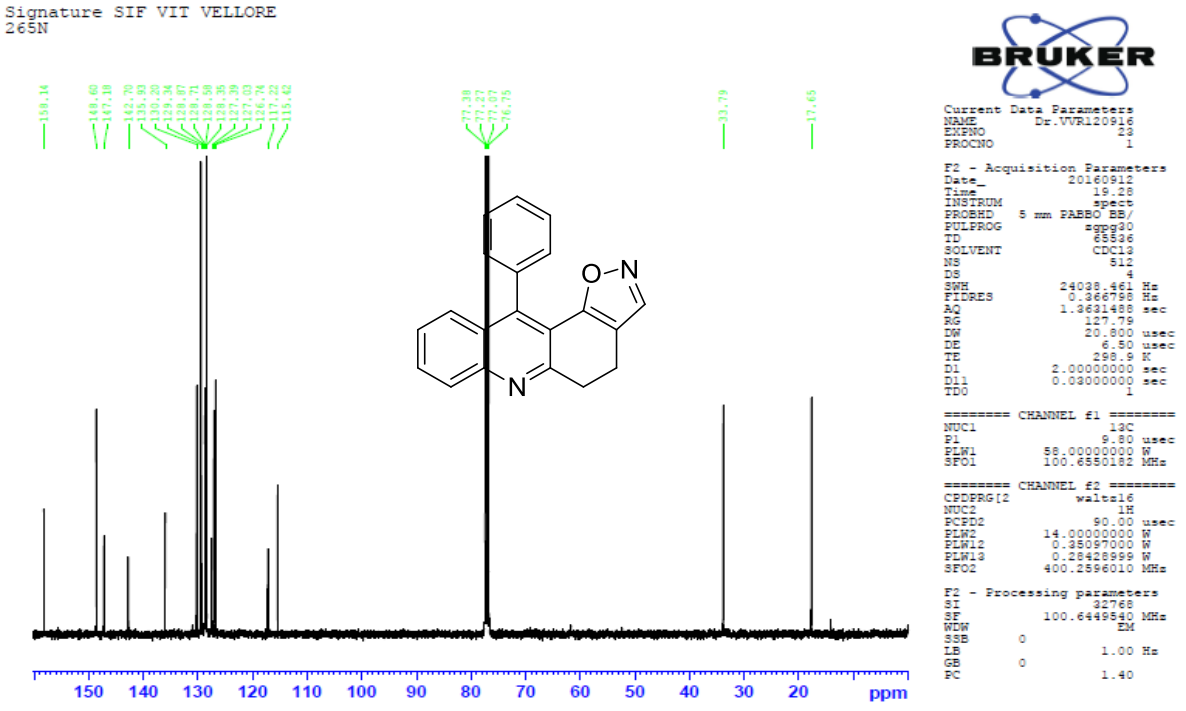

Figure 64: ^{13}C NMR spectrum of *4,5-dihydro-11-phenylisoxazolo[5,4-a]acridine* (5a):

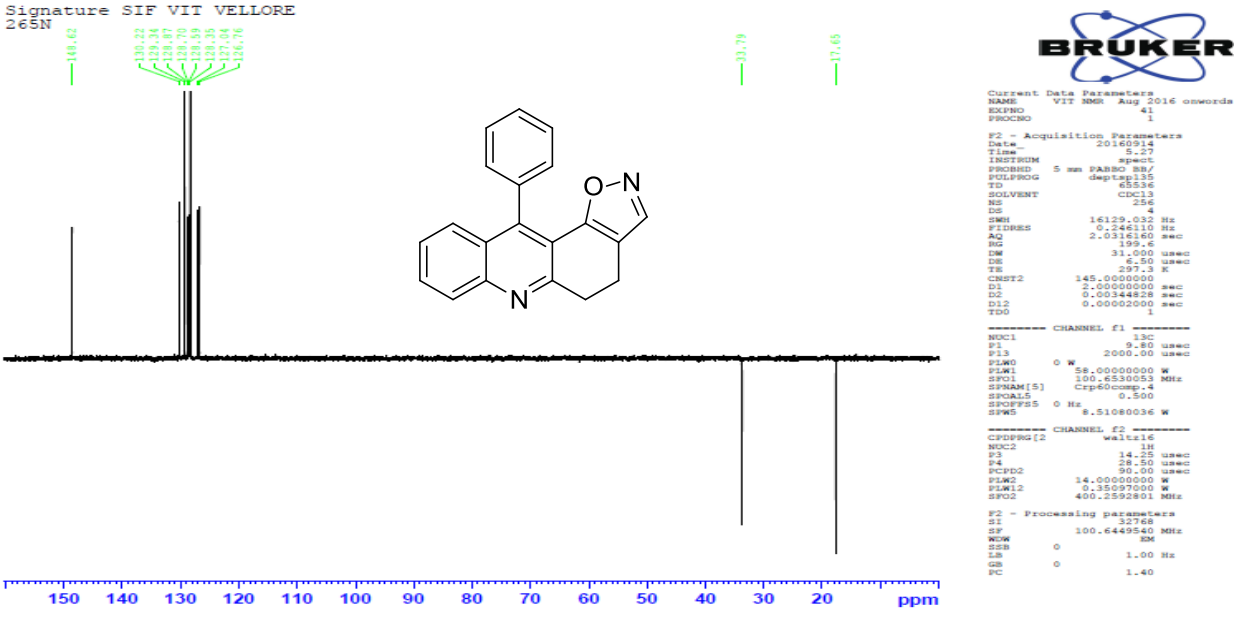

Figure 65: DEPT-135 spectrum of *4,5-dihydro-11-phenylisoxazolo[5,4-a]acridine* (5a):

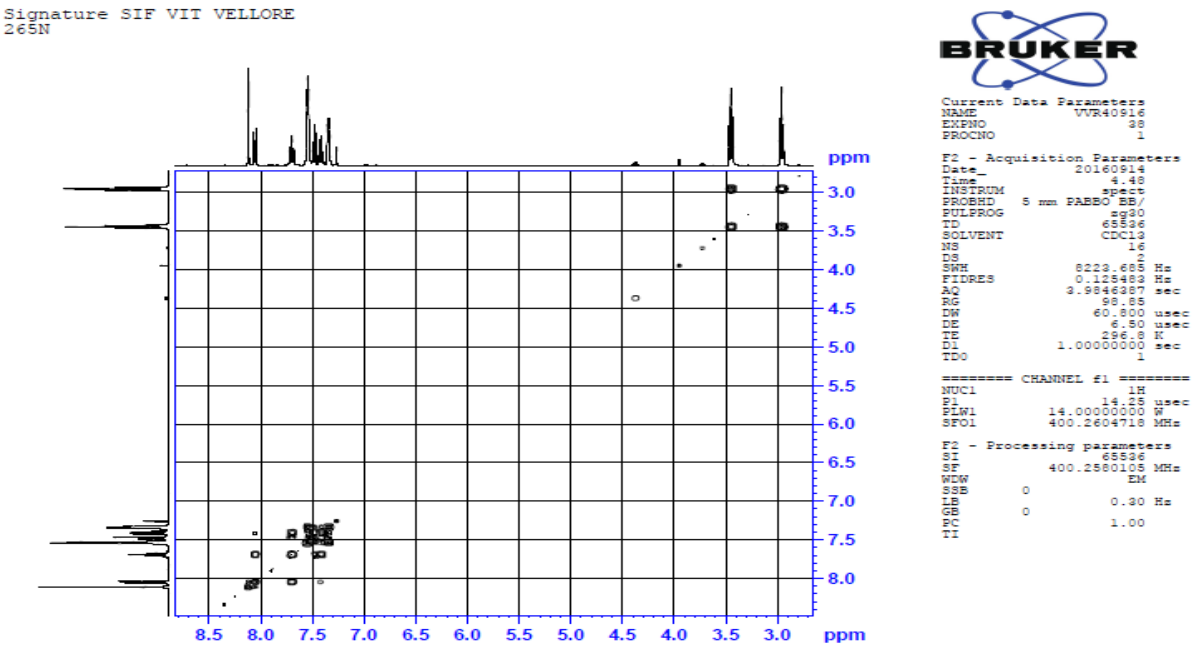

Figure 66: H-H COSY spectrum of *4,5-dihydro-11-phenylisoxazolo[5,4-a]acridine* (5a):

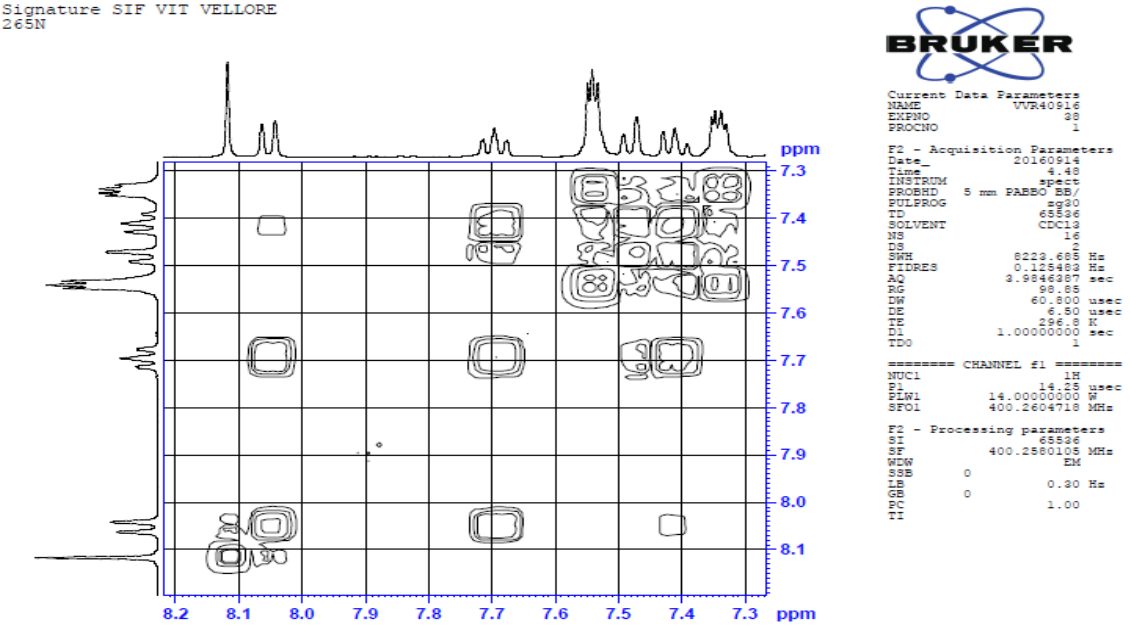

Figure 67: Enlarged H-H COSY spectrum of *4,5-dihydro-11-phenylisoxazolo[5,4-a]Acridine* (5a):

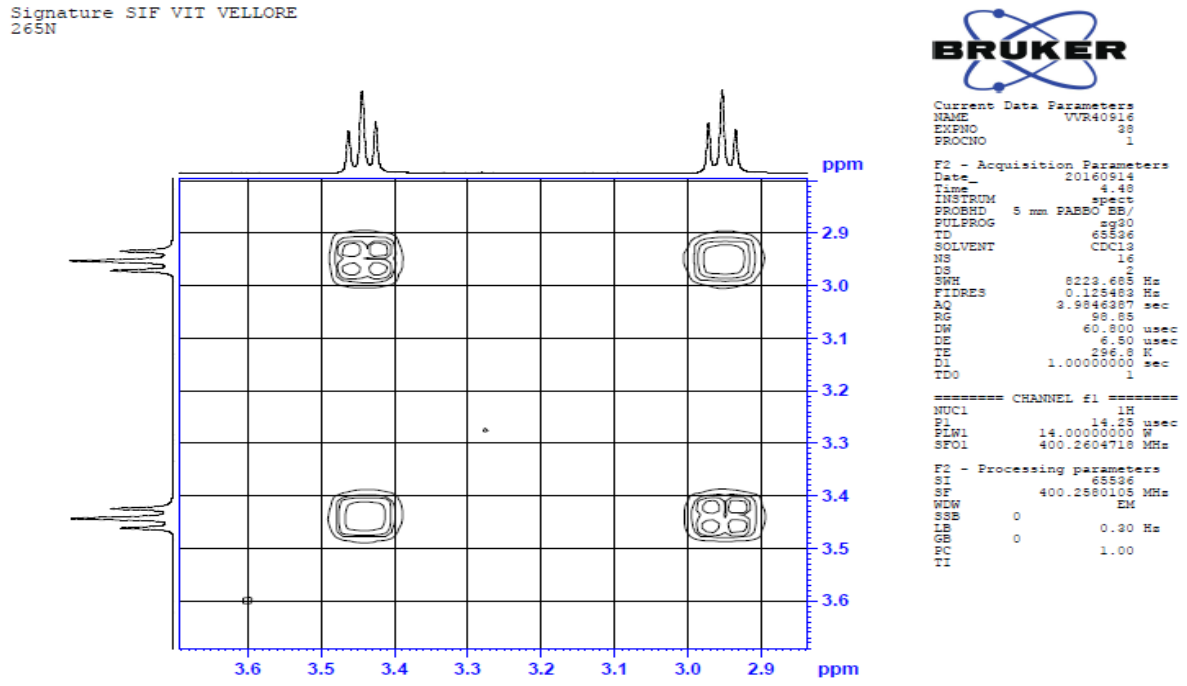

Figure 68: Enlarged H-H COSY spectrum of *4,5-dihydro-11-phenylisoxazolo[5,4-a]Acridine* (5a):

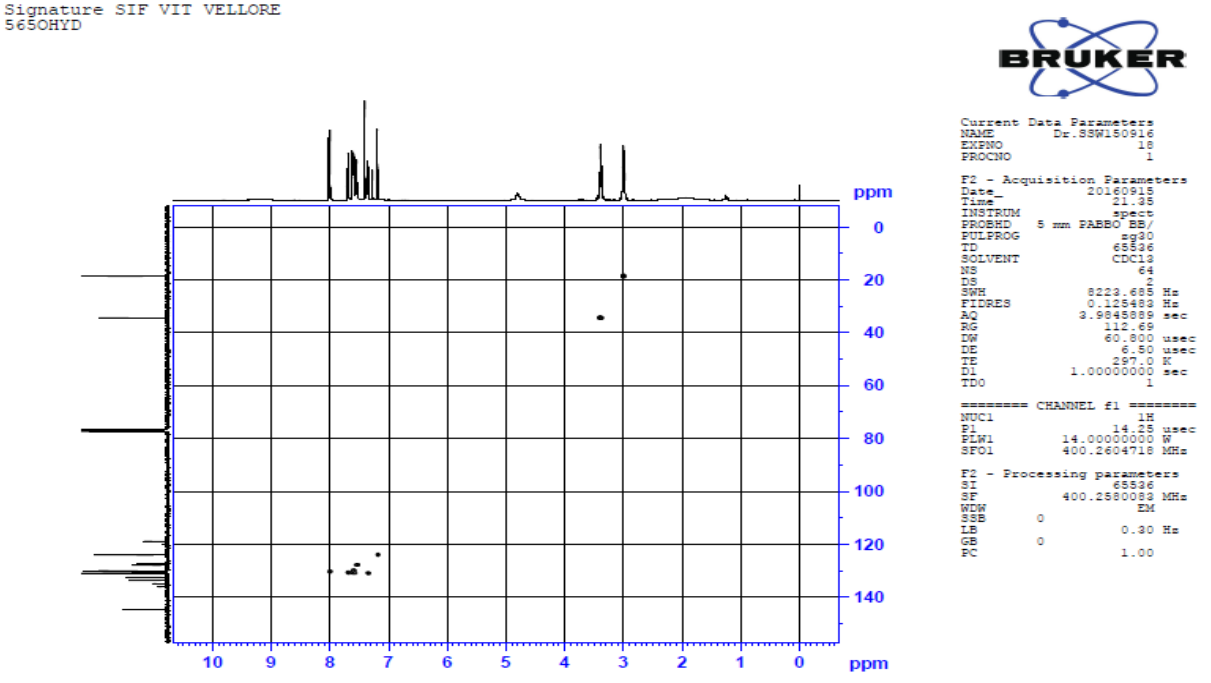

Figure 69: HSQC spectrum of *4,5-dihydro-11-phenylisoxazolo[5,4-a]acridine* (5a):

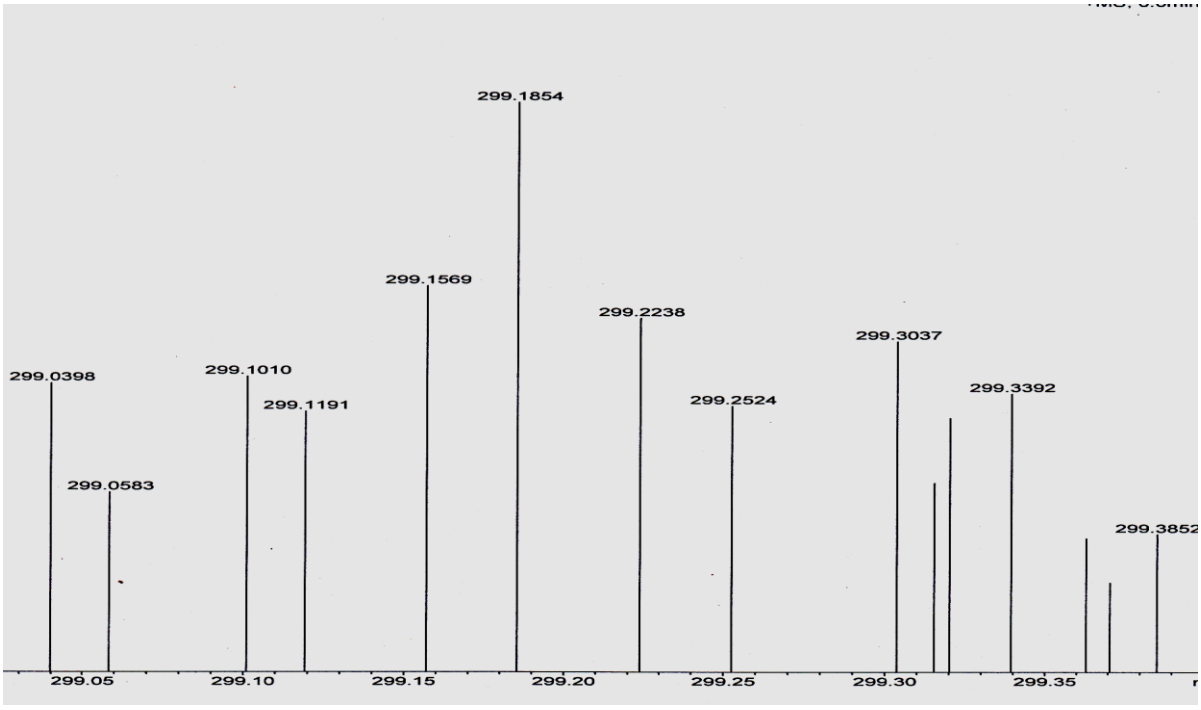

Figure 70: HRMS of *4,5-dihydro-11-phenylisoxazolo[5,4-a]acridine* (5a):

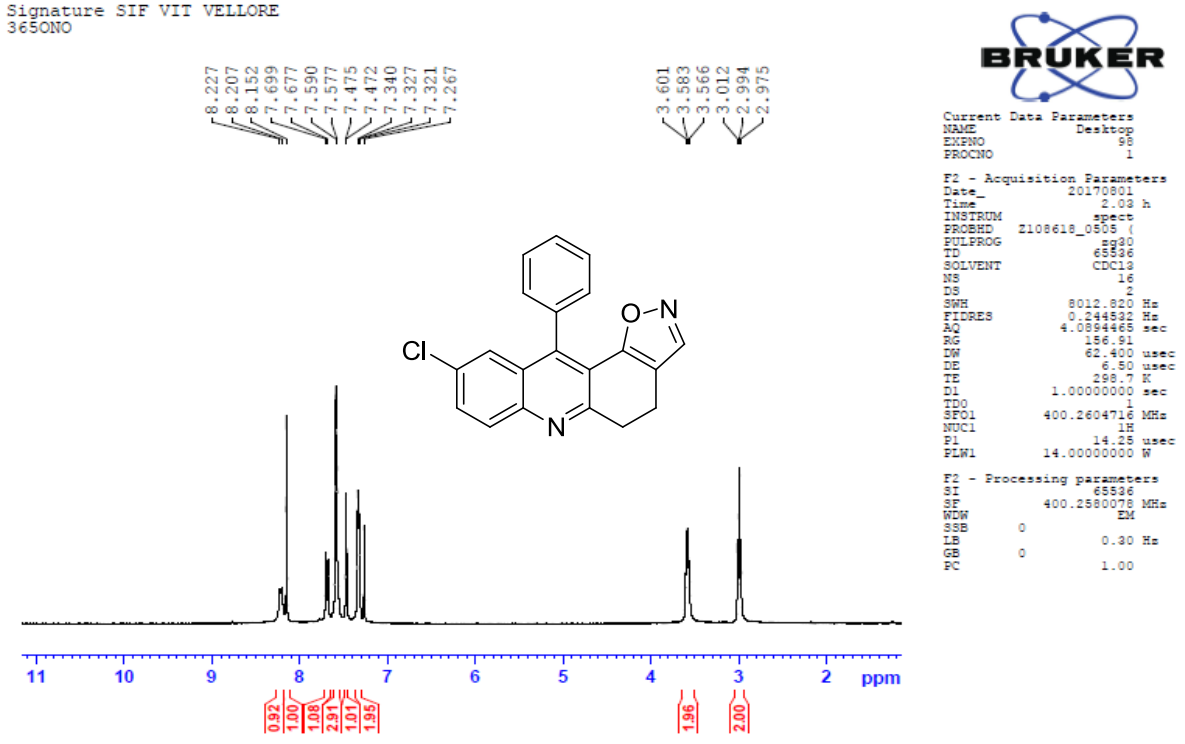

Figure 71: ^{1}H NMR spectrum of *9-chloro-4,5-dihydro-11-phenylisoxazolo[3,4-a]acridine* (5b):

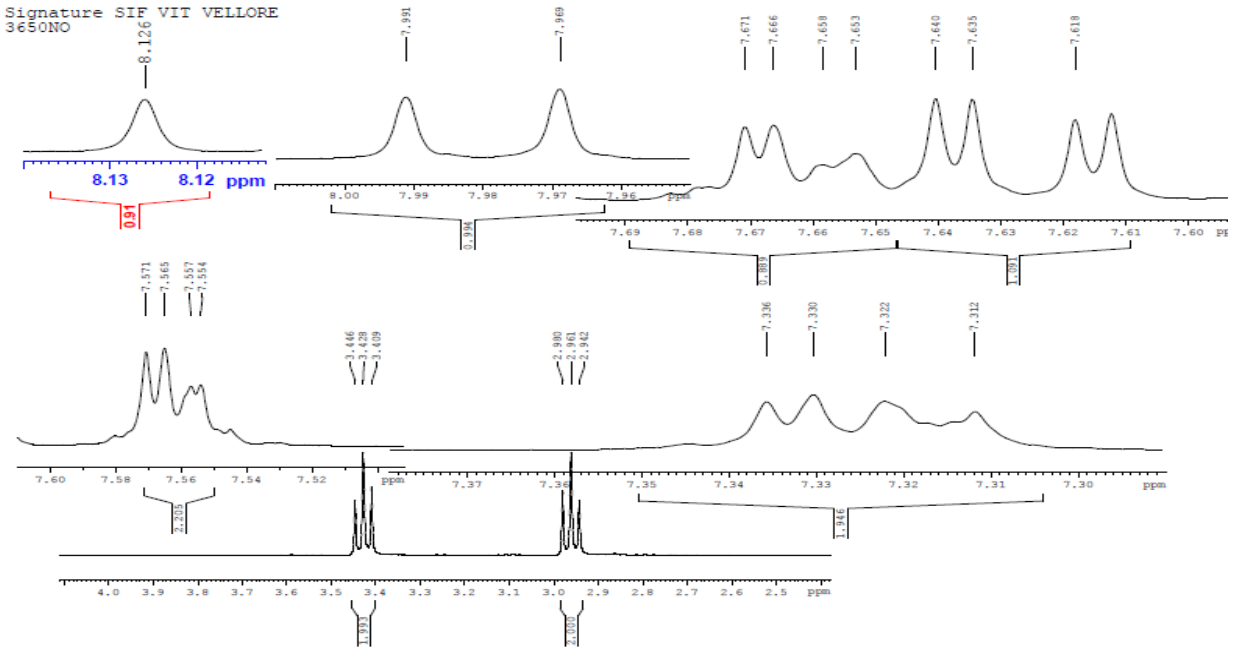

Figure 72: Enlarged ^{1}H NMR spectrum of *9-chloro-4,5-dihydro-11-phenylisoxazolo[3,4-a]acridine* (5b):

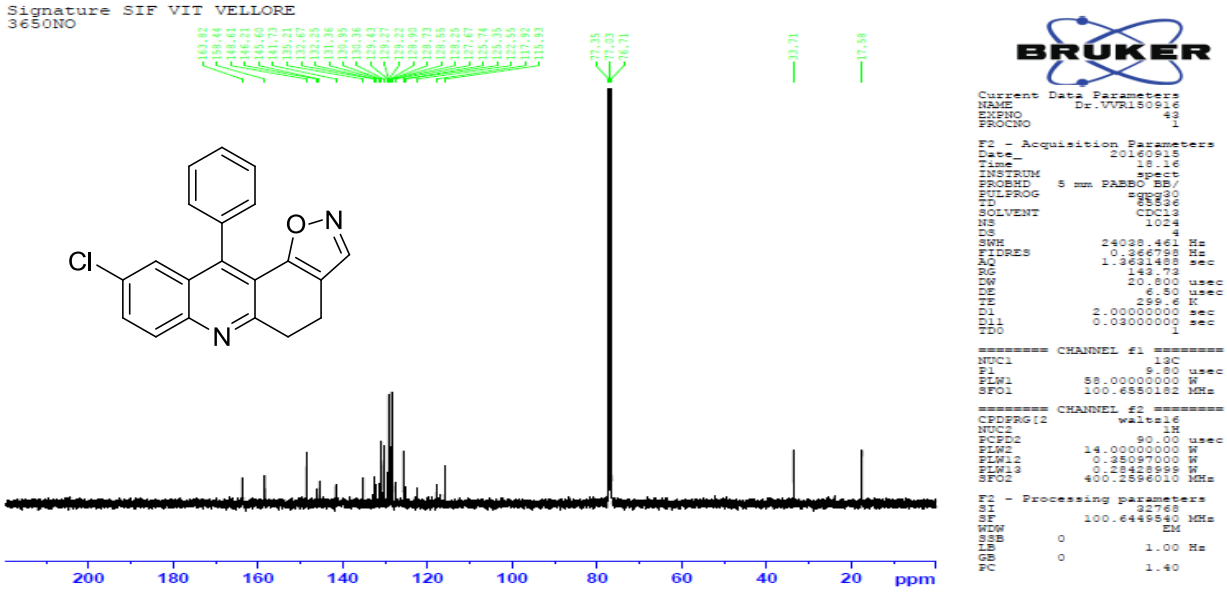

Figure 73: ^{13}C NMR spectrum of *9-chloro-4,5-dihydro-11-phenylisoxazolo[3,4-a]acridine* (5b):

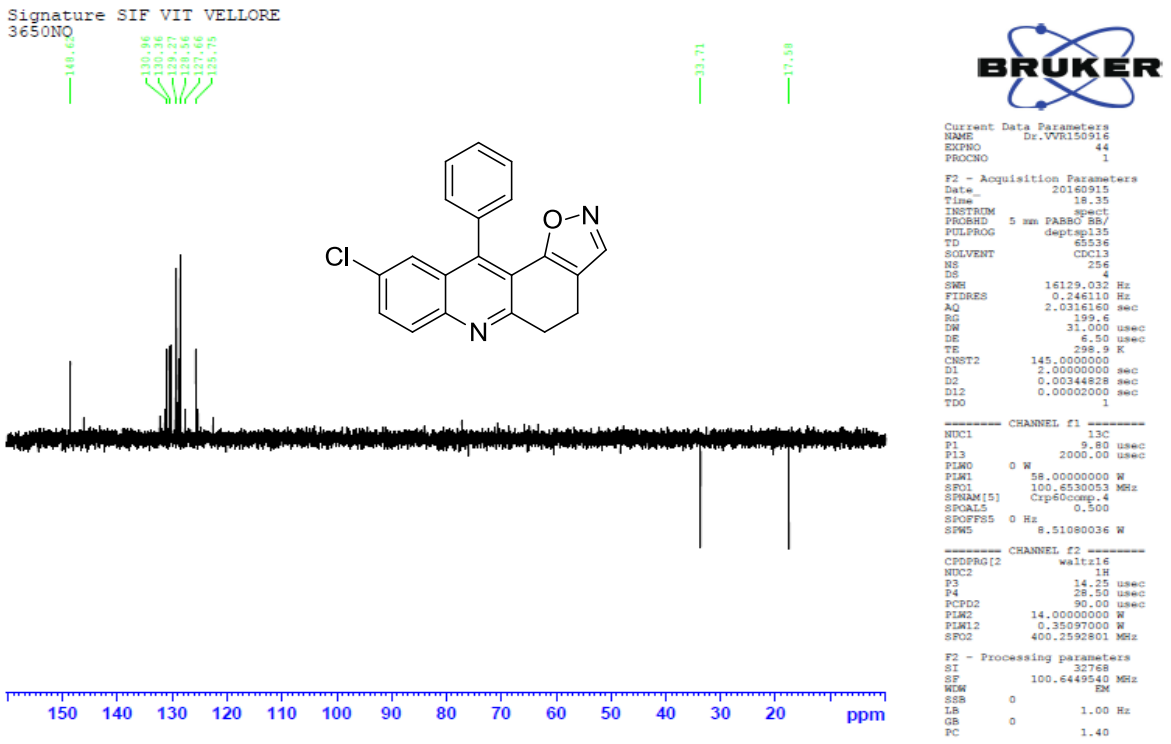

Figure 74: DEPT-135 spectrum of *9-chloro-4,5-dihydro-11-phenylisoxazolo[3,4-a]acridine* (5b):

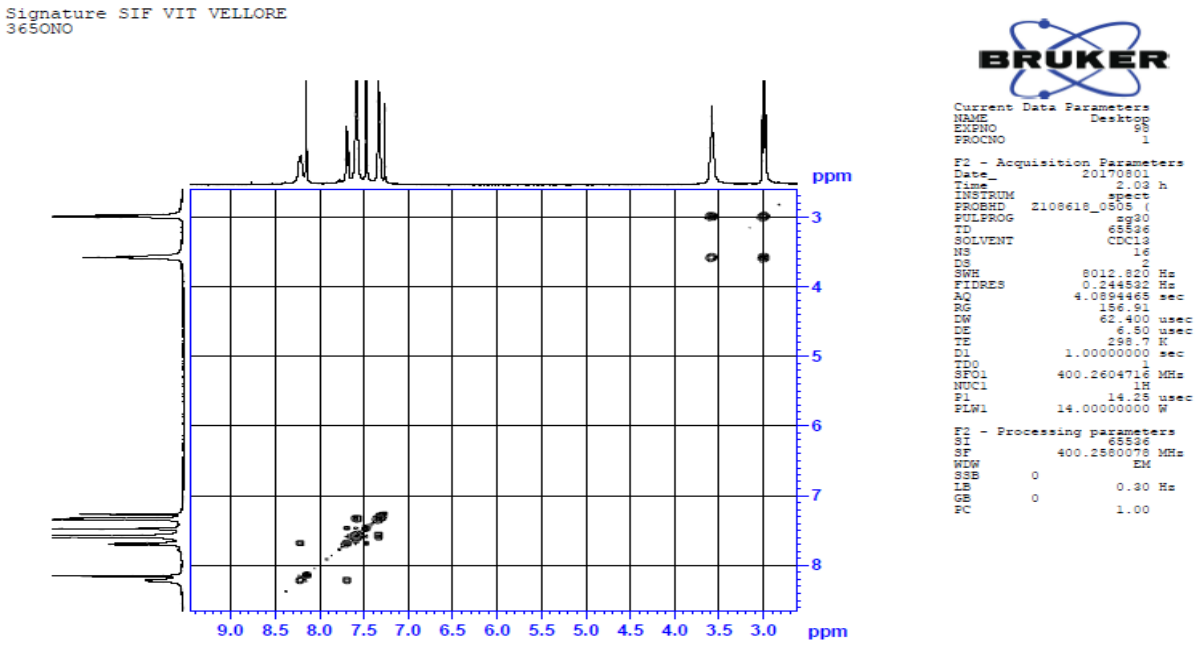

Figure 75: Enlarged H-H COSY spectrum of *9-chloro-4,5-dihydro-11-phenylisoxazolo[3,4-a]acridine* (5b):

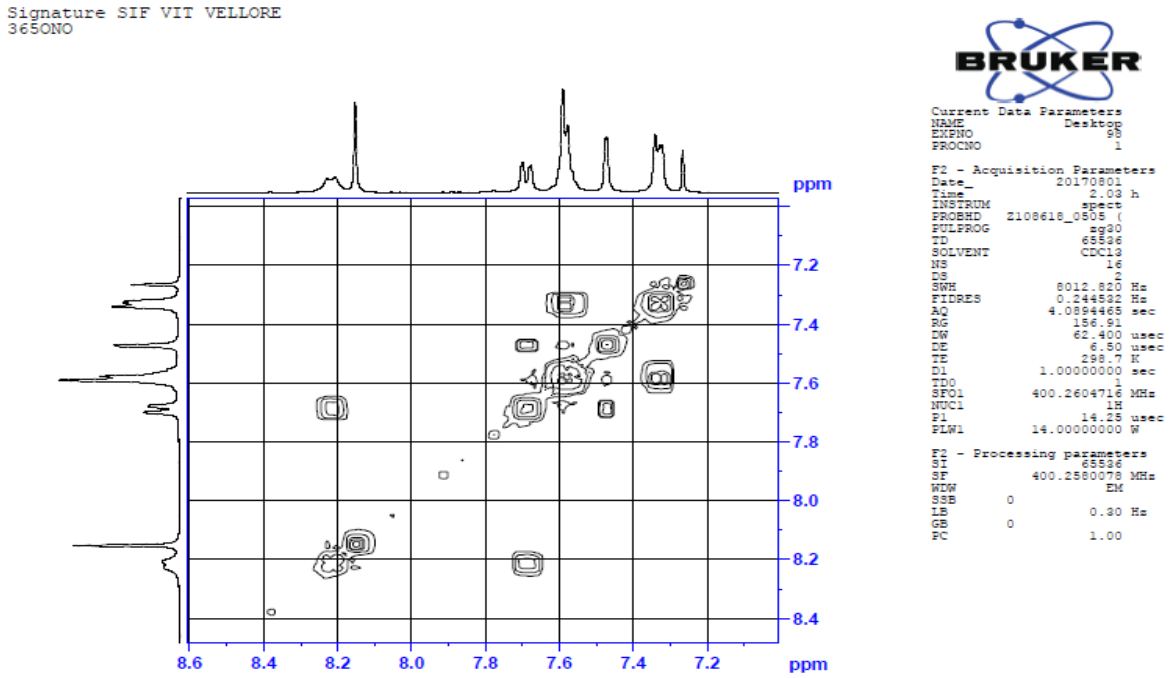

Figure 76: Enlarged H-H COSY spectrum of *9-chloro-4,5-dihydro-11-phenylisoxazolo[3,4-a]acridine* (5b):

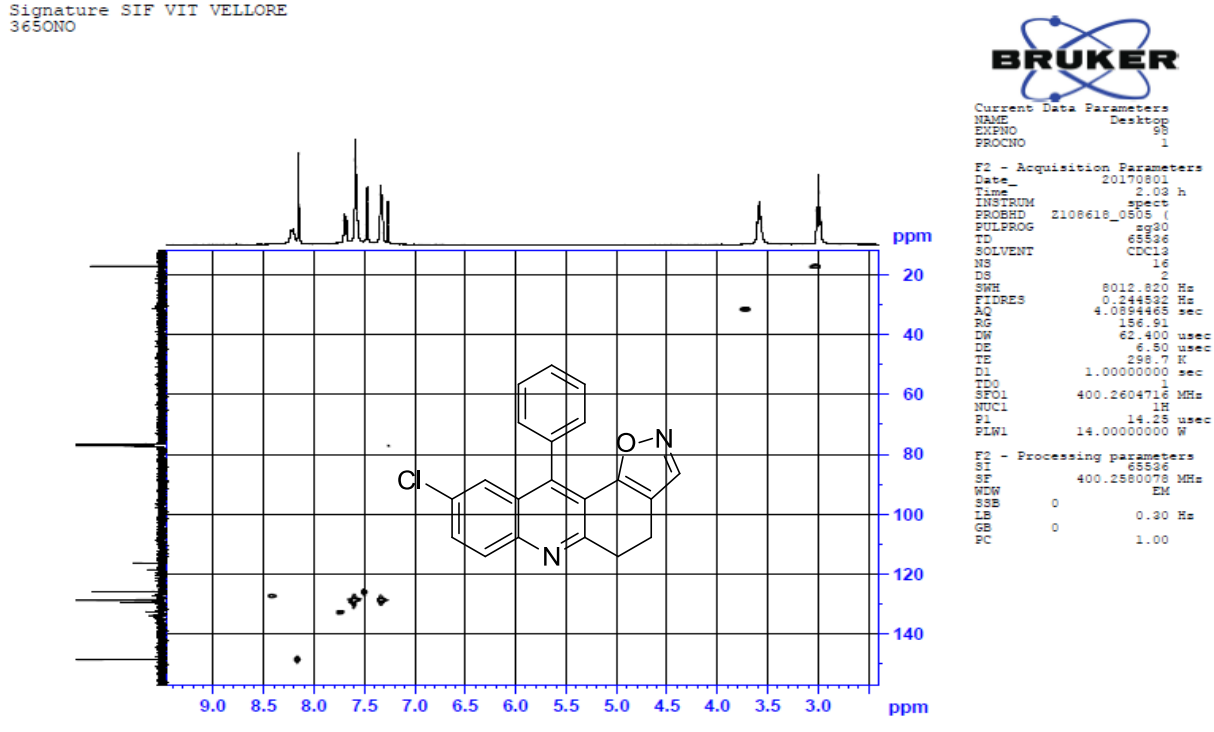

Figure 77: HSQC spectrum of *9-chloro-4,5-dihydro-11-phenylisoxazolo[3,4-a]acridine* (5b):

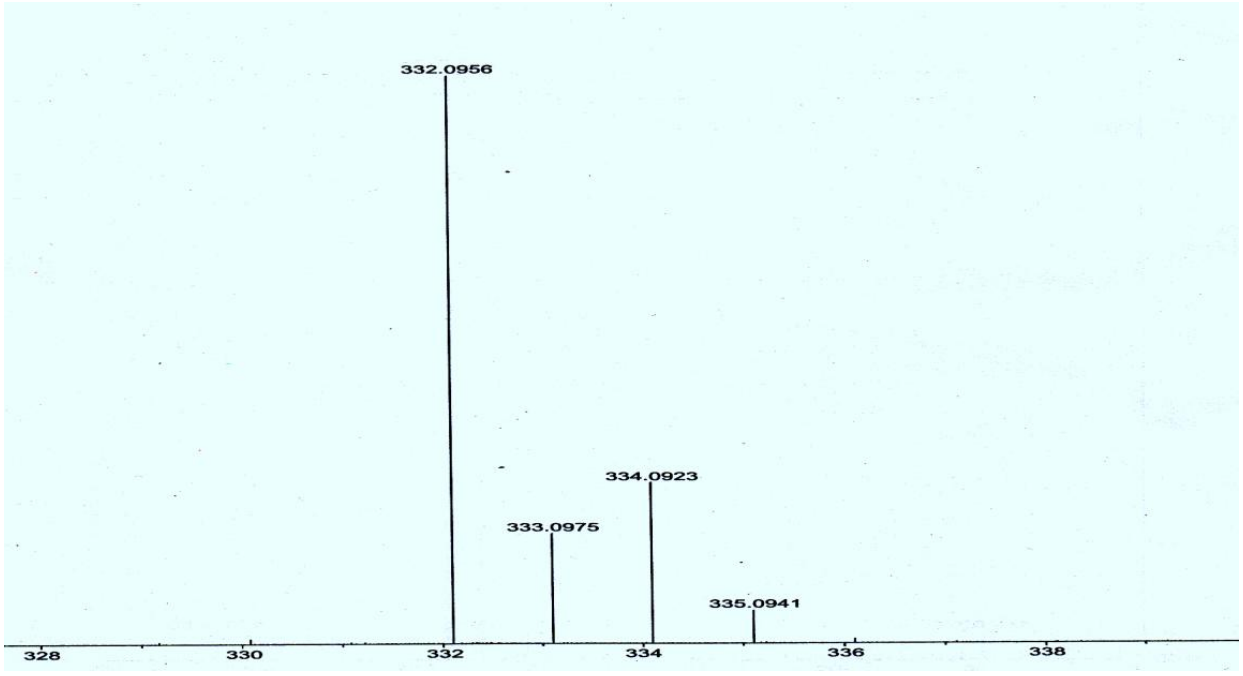

Figure 78: HRMS of *9-chloro-4,5-dihydro-11-phenylisoxazolo[3,4-a]acridine* (5b):

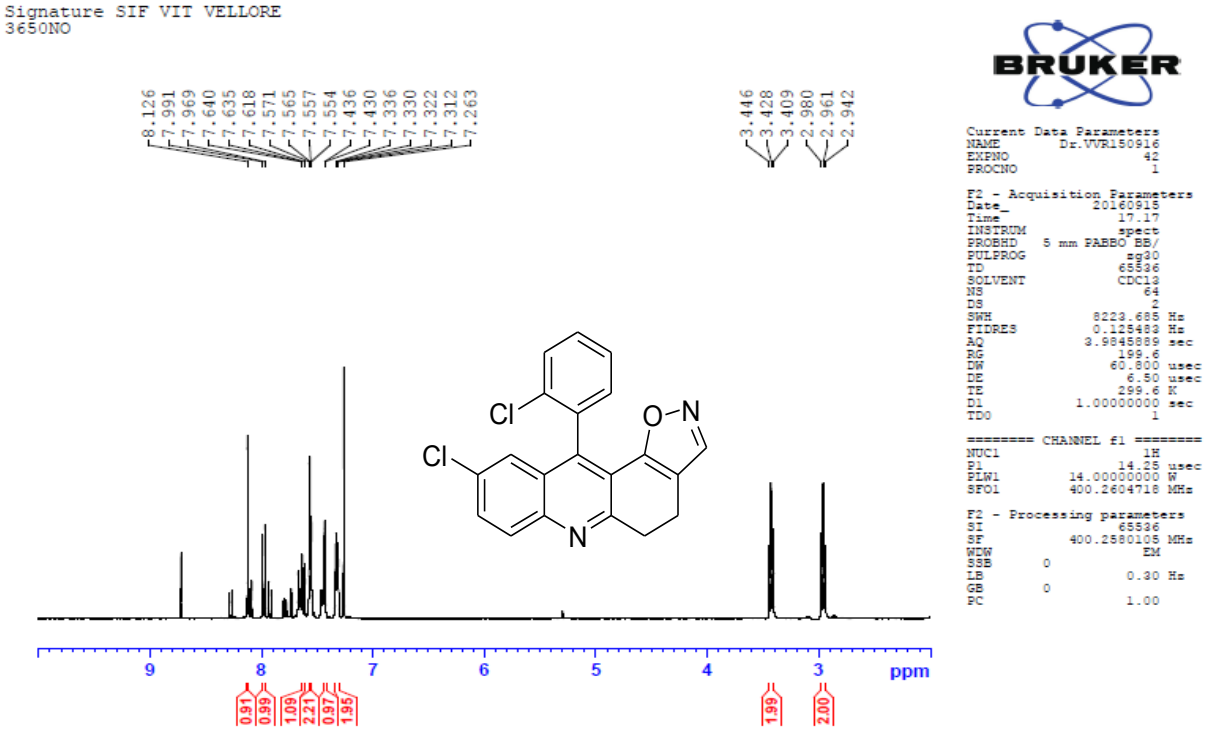

Figure 79: ^{1}H NMR spectrum of *9-chloro-11-(2-chlorophenyl)-4,5-dihydroisoxazolo[5,4-a]acridine* (5c):

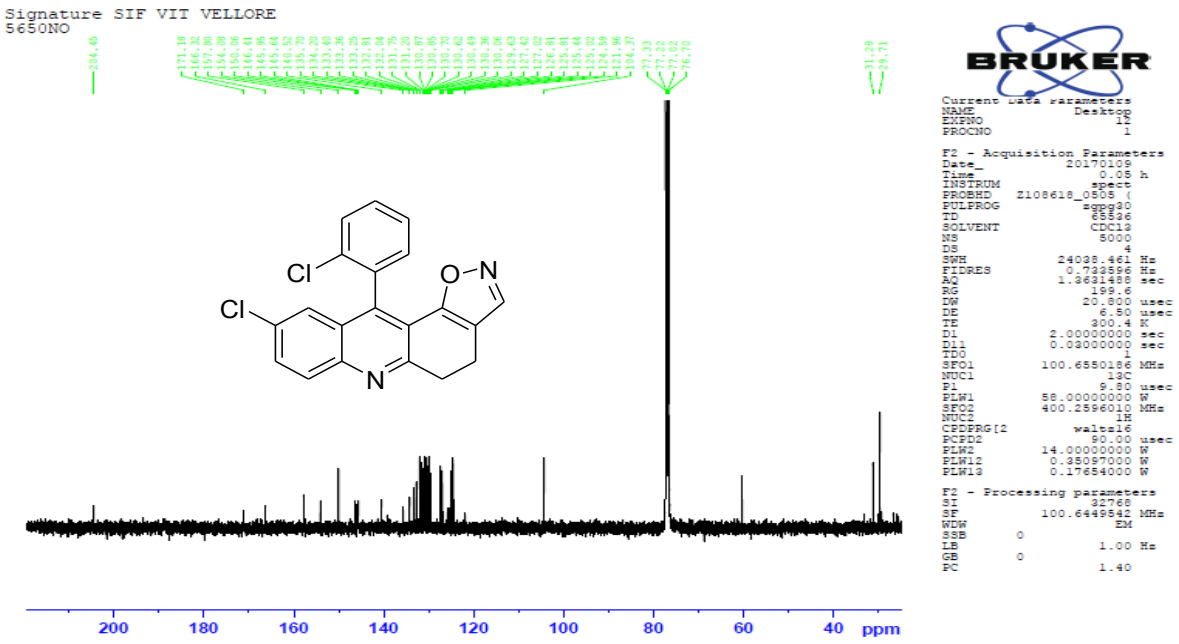

Figure 80: ^{13}C NMR spectrum of *9-chloro-11-(2-chlorophenyl)-4,5-dihydroisoxazolo[5,4-a]acridine* (5c)

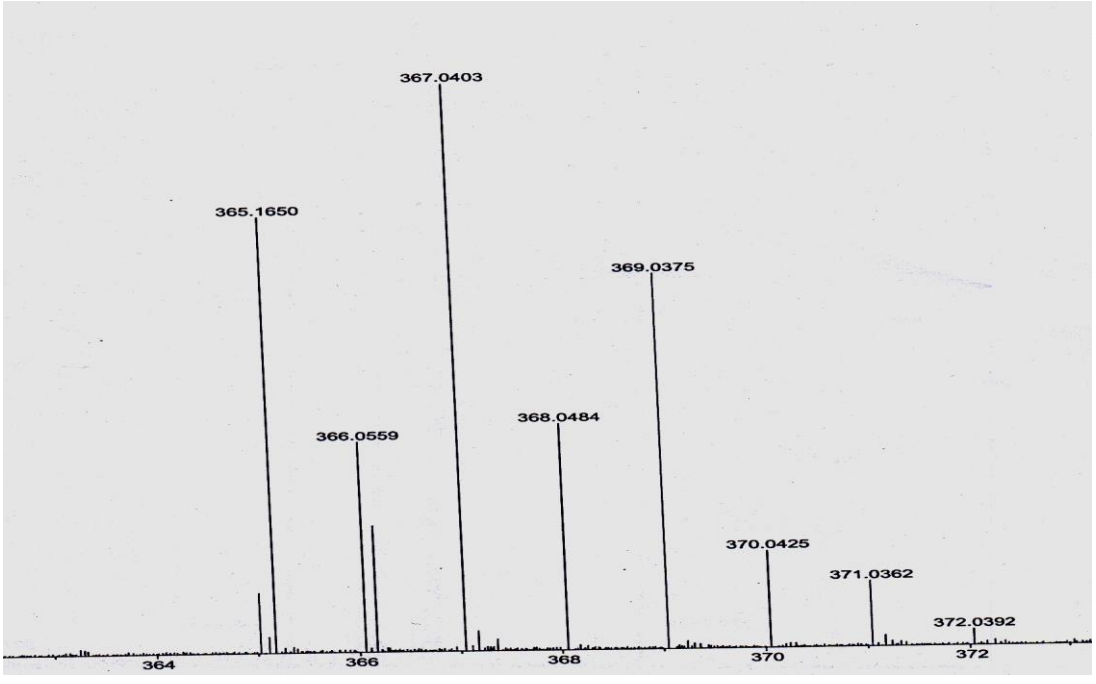

Figure 81: HRMS of *9-chloro-11-(2-chlorophenyl)-4,5-dihydroisoxazolo[5,4-a]acridine* (5c):

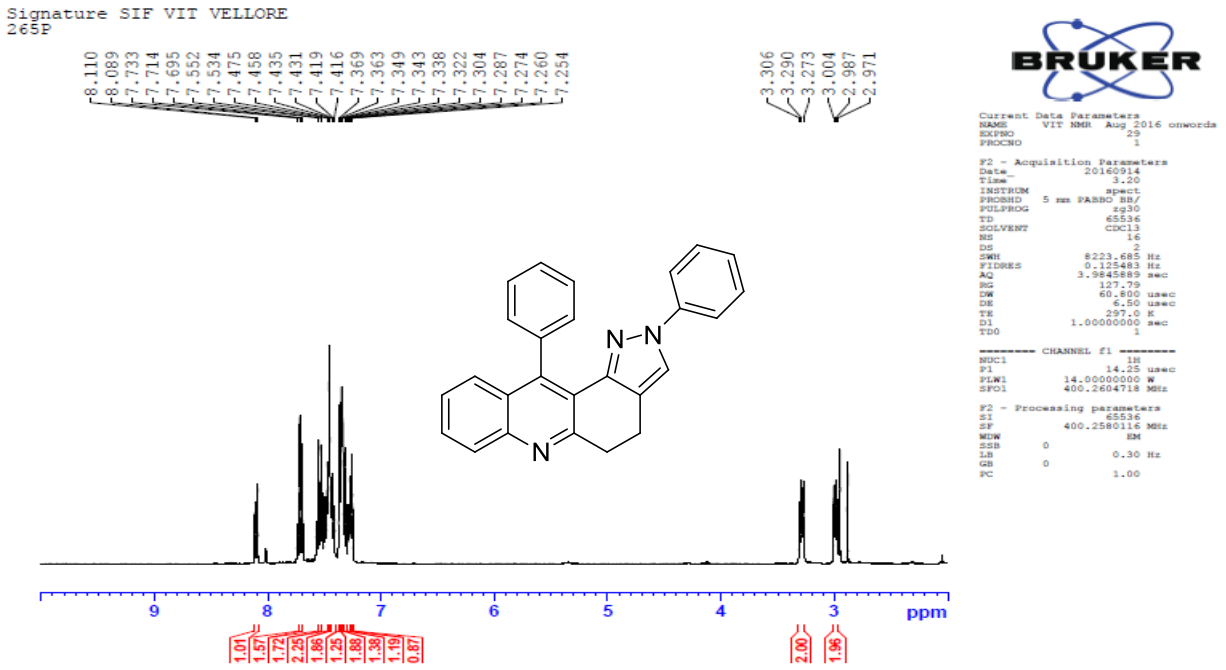

Figure 82: ^{1}H NMR spectrum of *4,5-dihydro-1,11-diphenyl-1H-pyrazolo[3,4-a]acridine* (6a):

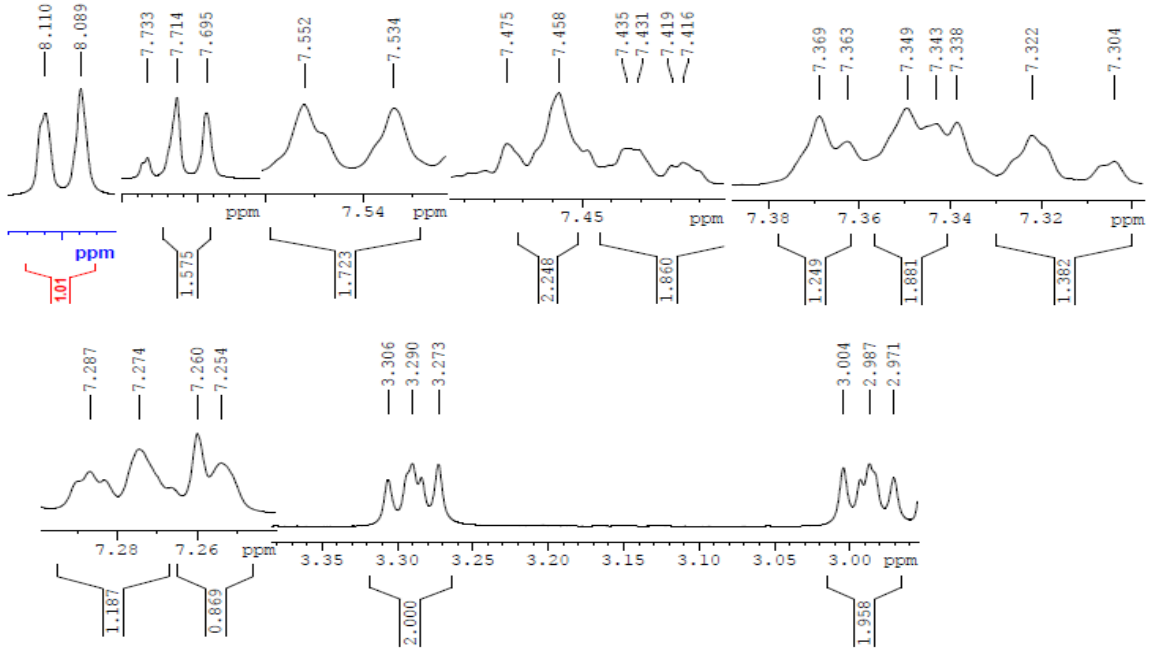

Figure 83: Enlarged ^{1}H NMR spectrum of *4,5-dihydro-1,11-diphenyl-1H-pyrazolo[3,4-a]acridine* (6a):

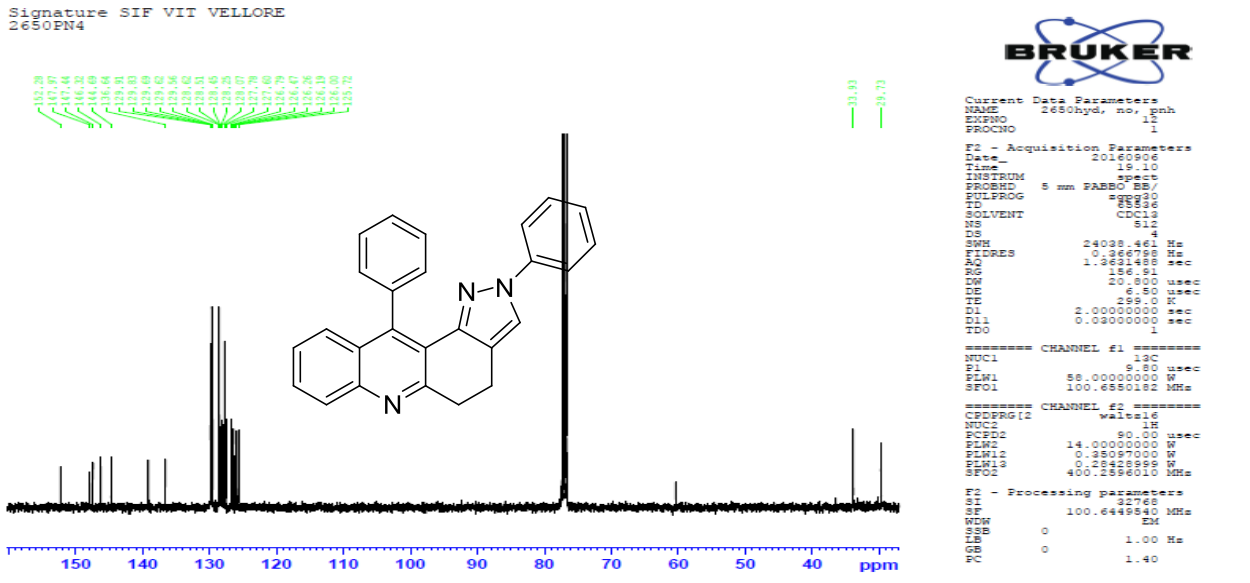

Figure 84: ^{13}C NMR spectrum of *4,5-dihydro-1,11-diphenyl-1H-pyrazolo[3,4-a]acridine* (6a):

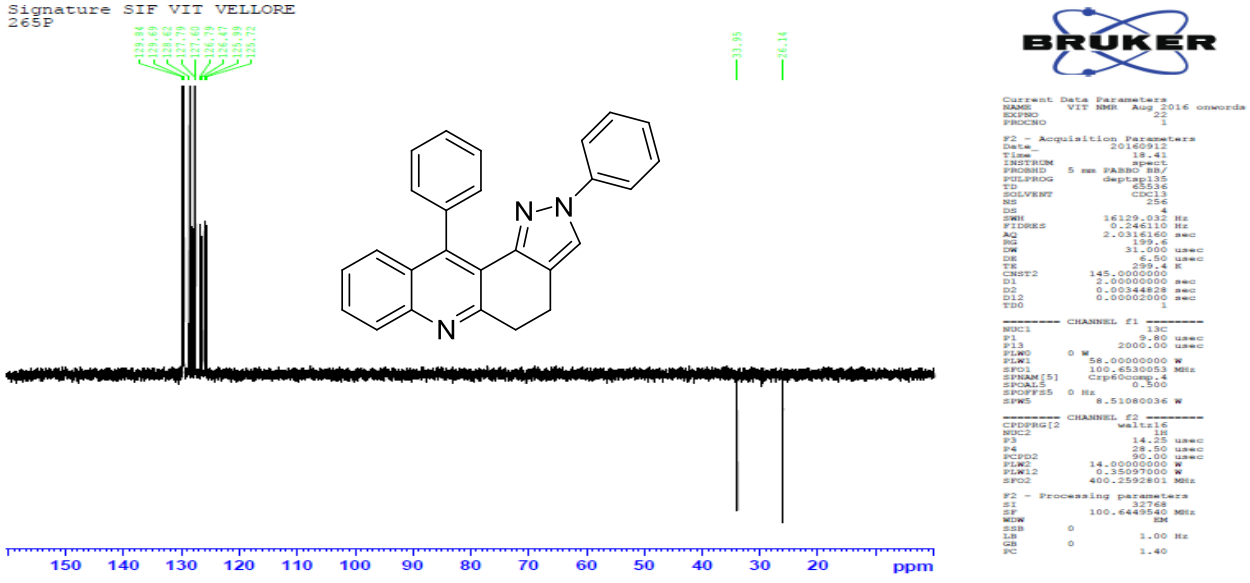

Figure 85: DEPT-135 spectrum of *4,5-dihydro-1,11-diphenyl-1H-pyrazolo[3,4-a]acridine* (6a):

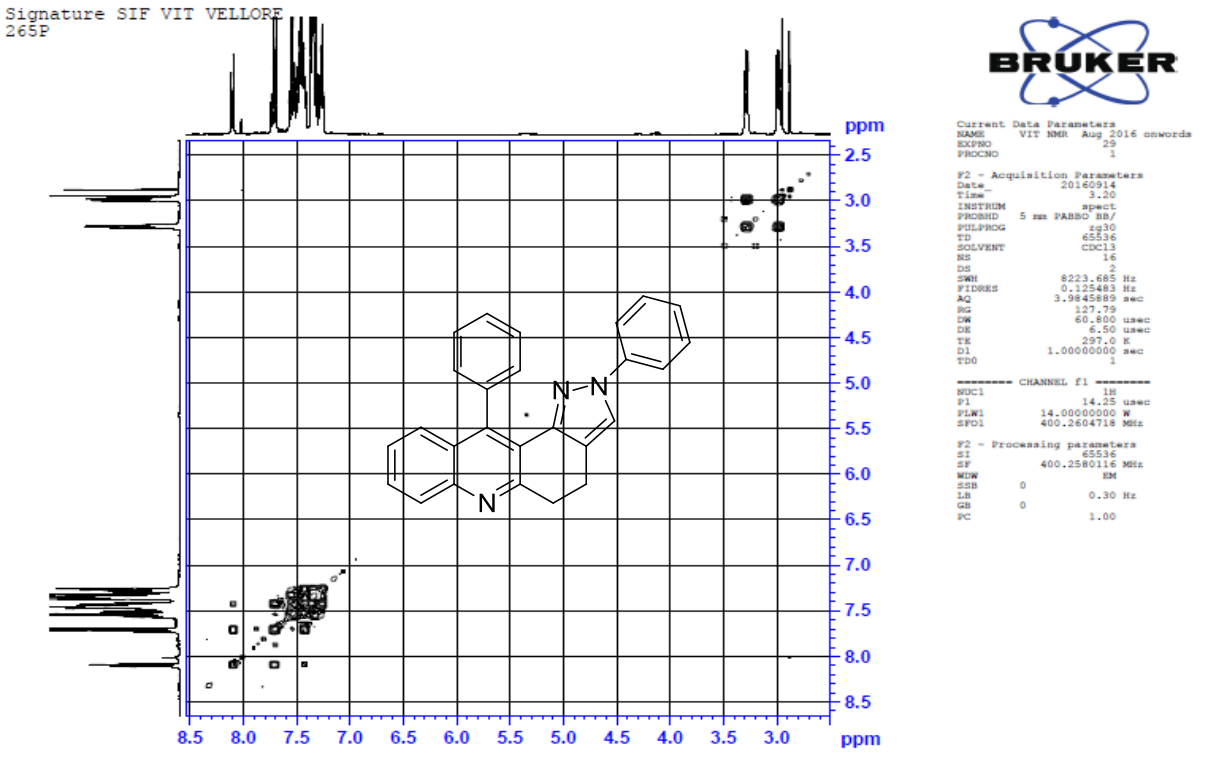

Figure 86: H-H COSY spectrum of *4,5-dihydro-1,11-diphenyl-1H-pyrazolo[3,4-a]acridine* (6a):

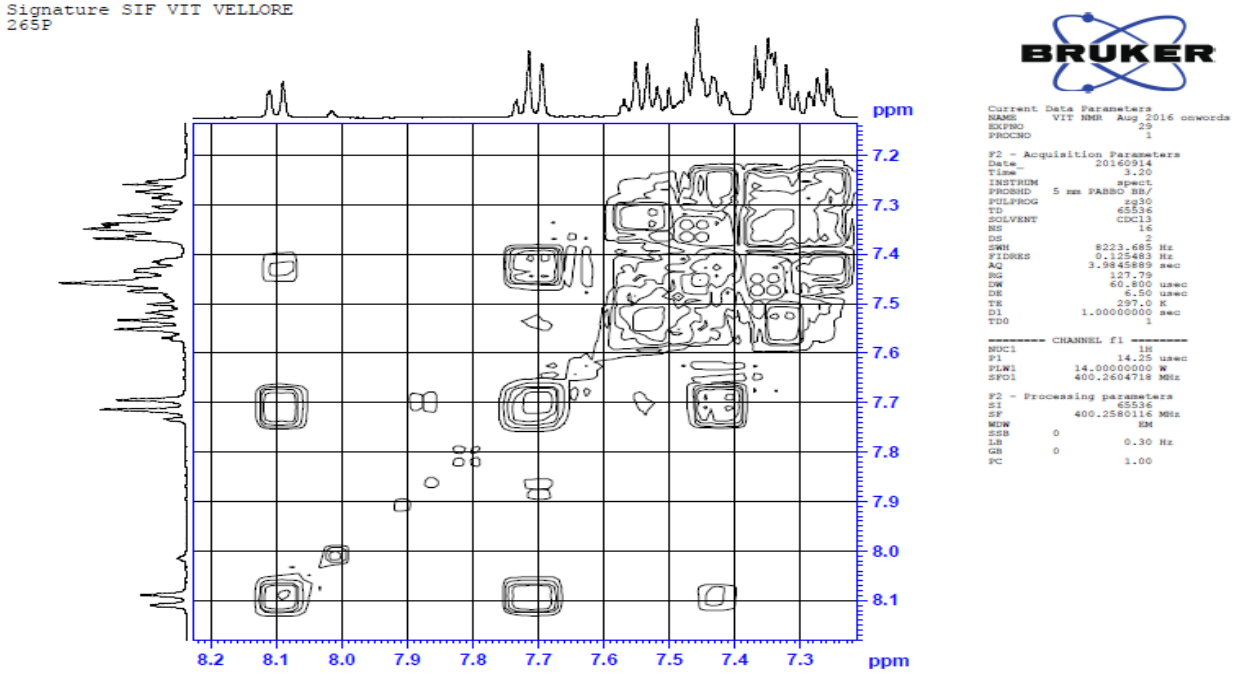

Figure 87: Enlarged H-H COSY spectrum of *4,5-dihydro-1,11-diphenyl-1H-pyrazolo[3,4-a]acridine* (6a):

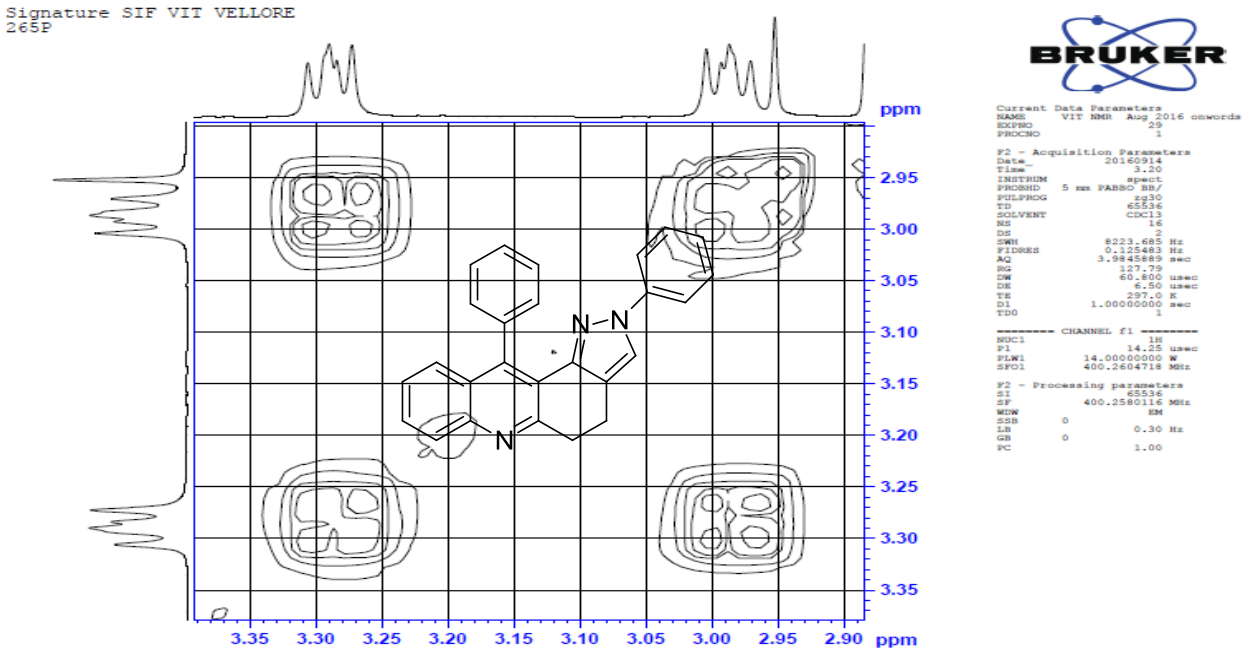

Figure 88: Enlarged H-H COSY spectrum of *4,5-dihydro-1,11-diphenyl-1H-pyrazolo[3,4-a]acridine* (6a):

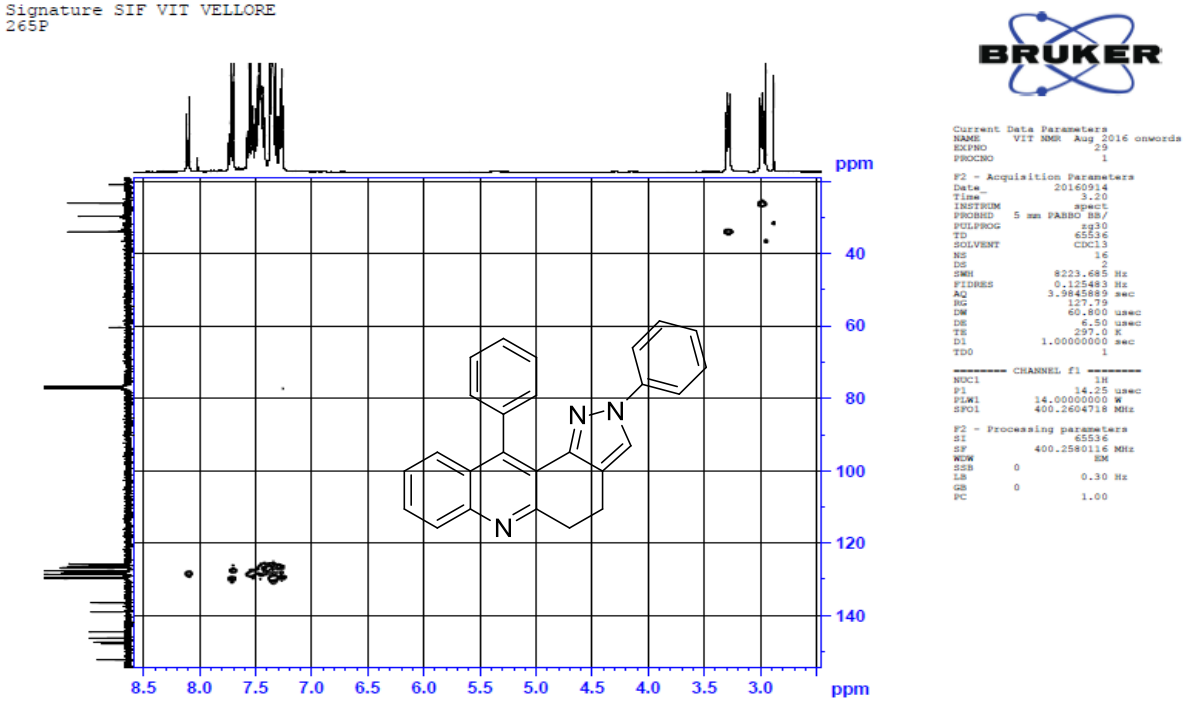

Figure 89: HSQC spectrum of *4,5-dihydro-1,11-diphenyl-1H-pyrazolo[3,4-a]acridine* (6a):

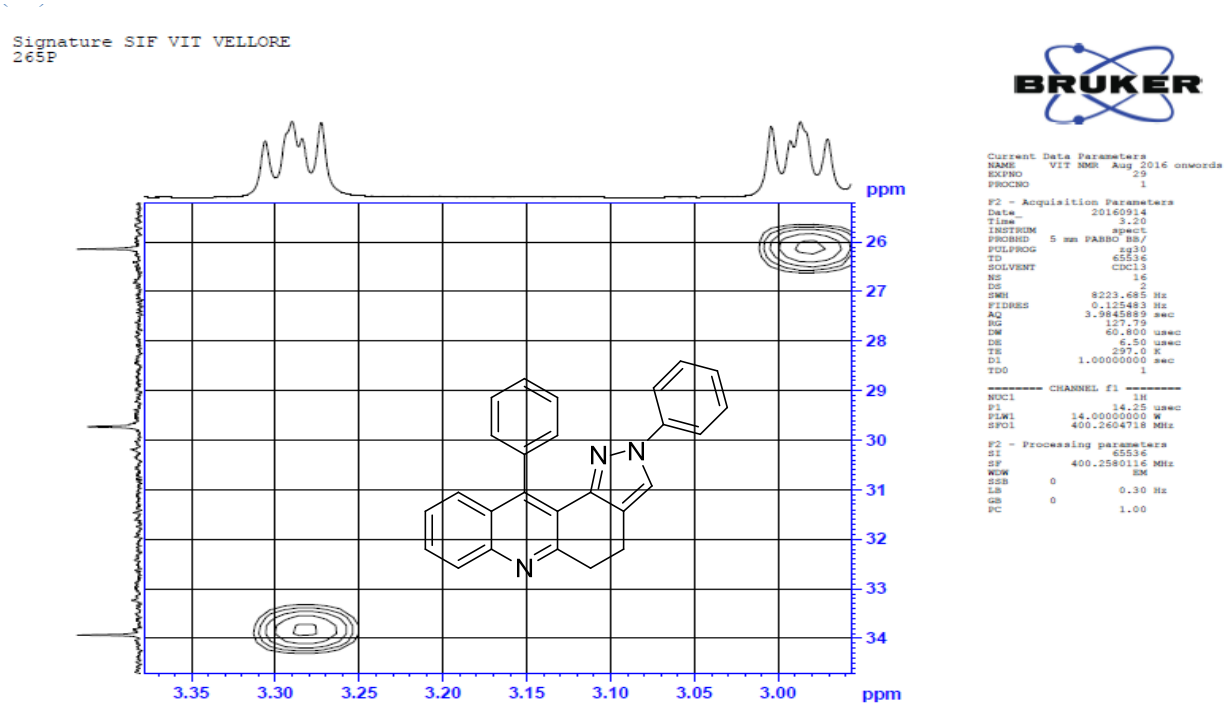

Figure 90: Enlarged HSQC spectrum of *4,5-dihydro-1,11-diphenyl-1H-pyrazolo[3,4-a]acridine* (6a):

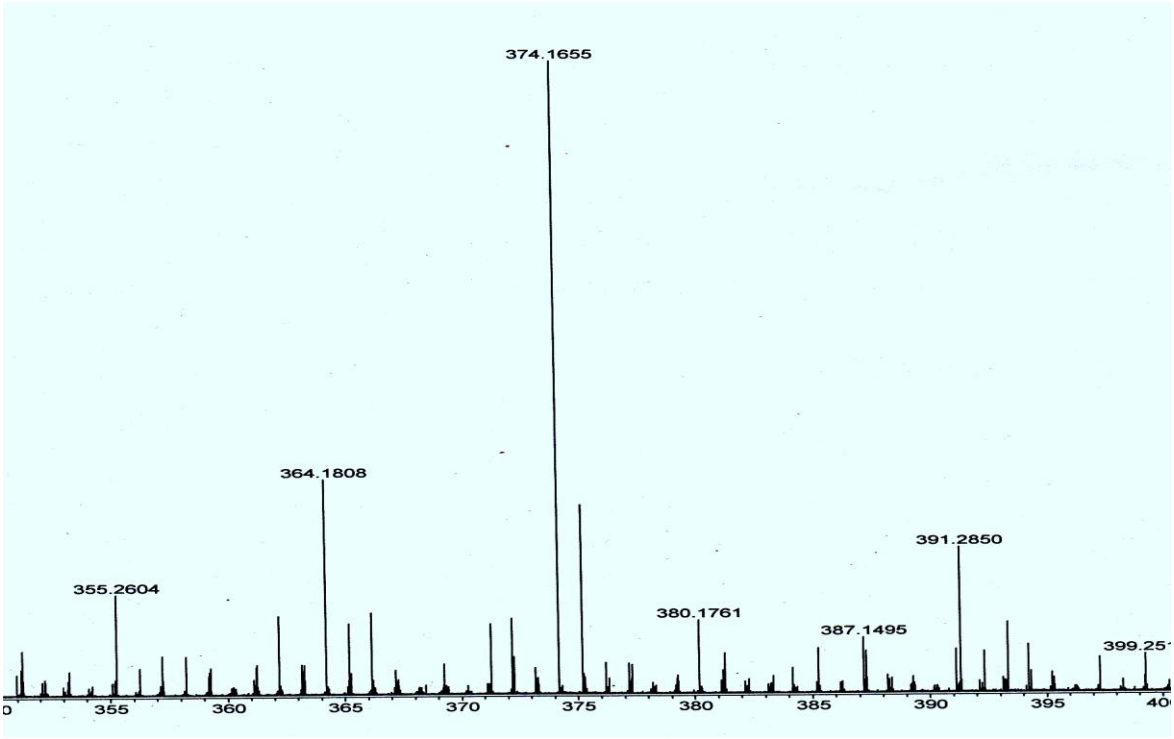

Figure 91: HRMS of *4,5-dihydro-1,11-diphenyl-1H-pyrazolo[3,4-a]acridine* (6a):

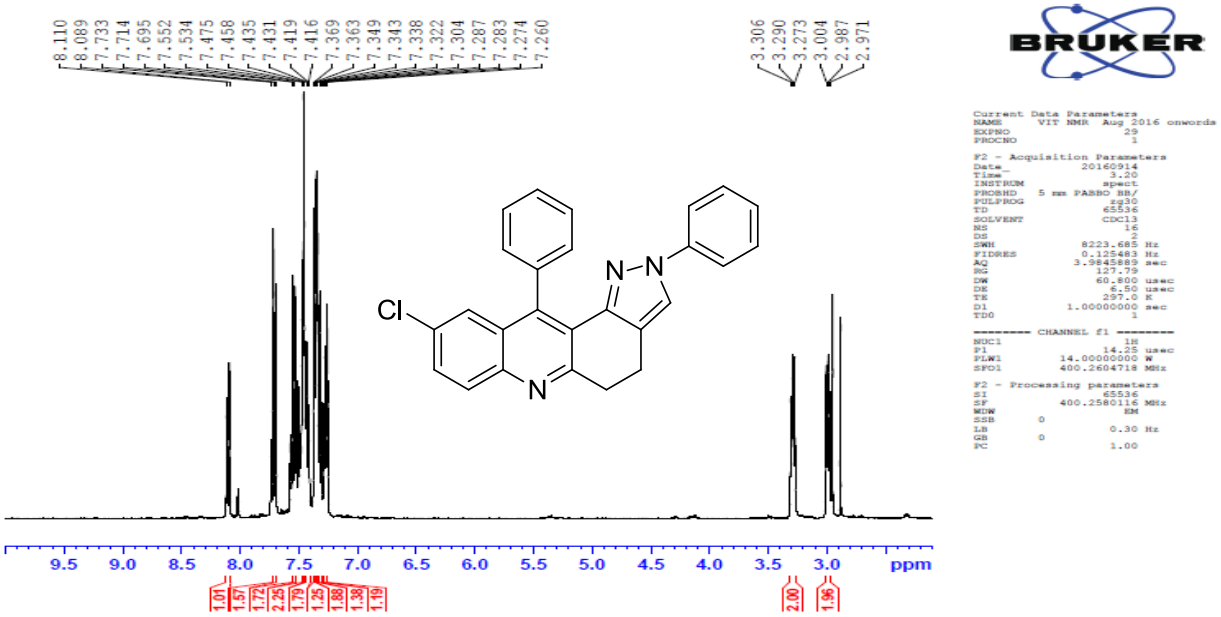

Figure 92: [1]H NMR spectrum of *9-chloro-4,5-dihydro-1,11-diphenyl-1H-pyrazolo[3,4-a]acridine* (6b):

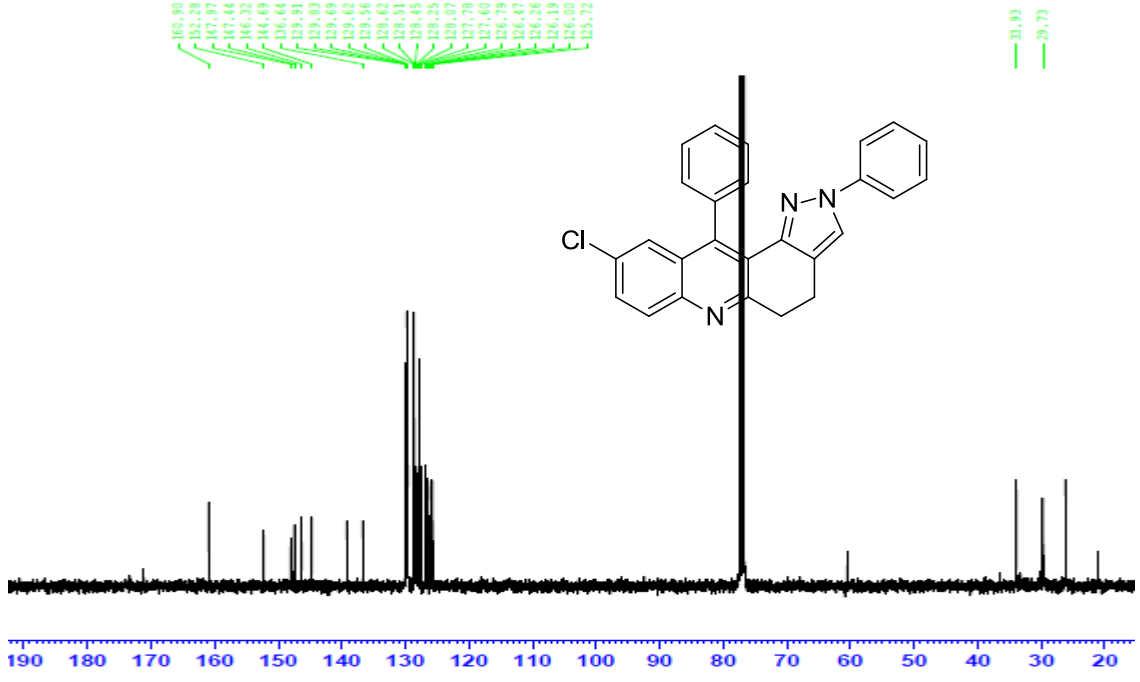

Figure 93: [13]C NMR spectrum of *9-chloro-4,5-dihydro-1,11-diphenyl-1H-pyrazolo[3,4-a]acridine* (6b):

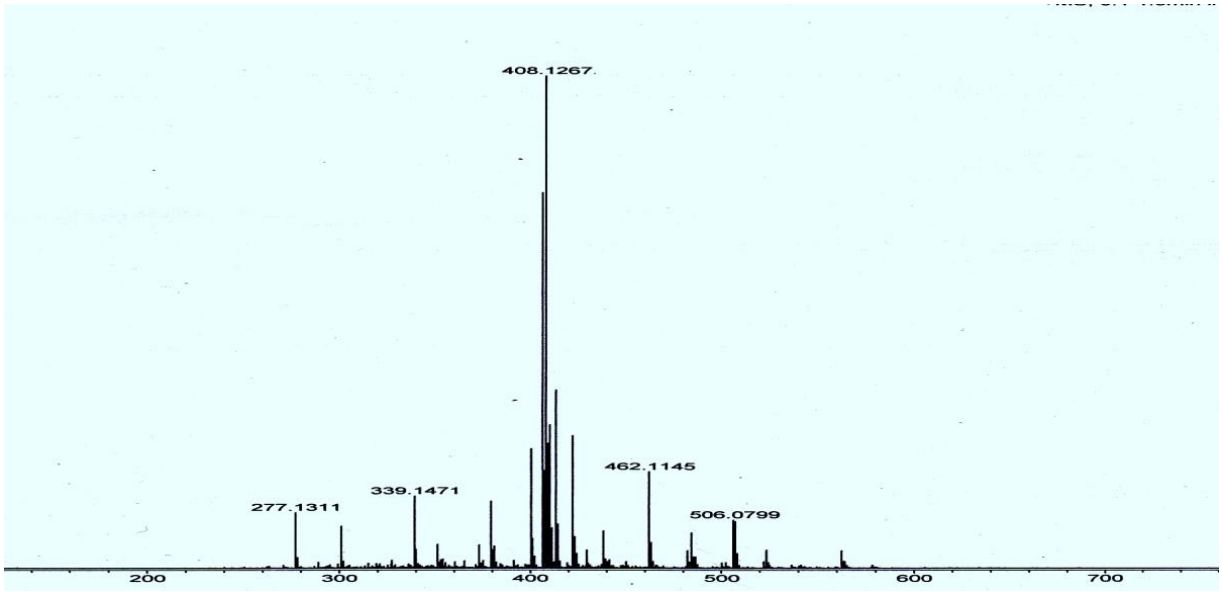

Figure 94: HRMS of *9-chloro-4,5-dihydro-1,11-diphenyl-1H-pyrazolo[3,4-a]acridine* (6b):

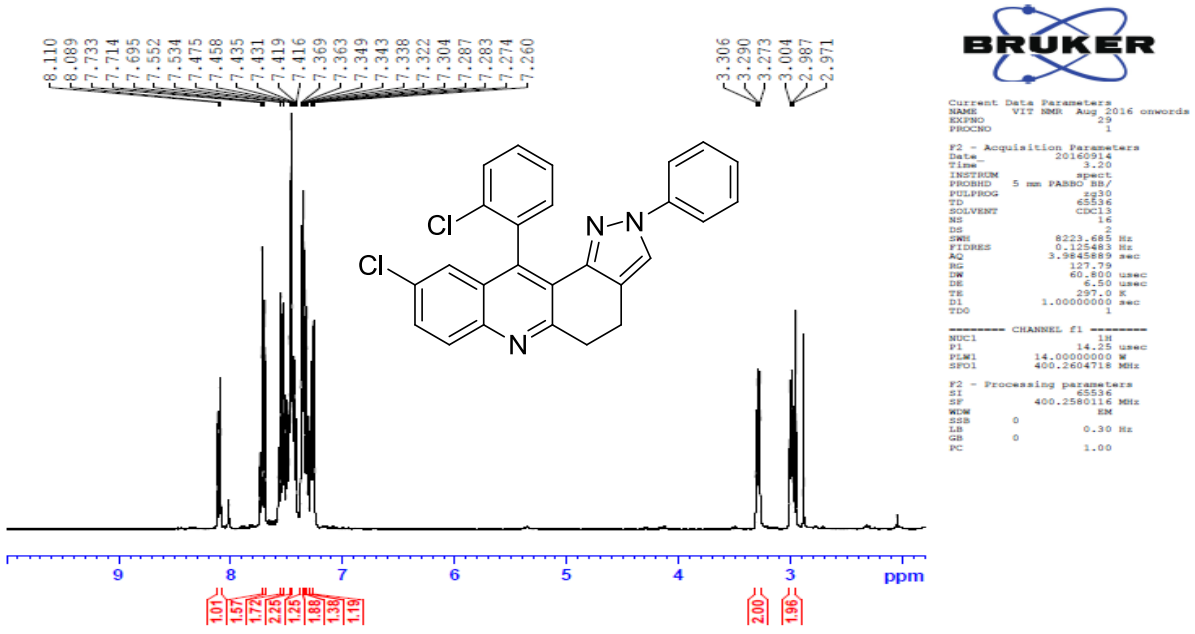

Figure 95: ^{1}H NMR spectrum of *9-chloro-11-(2-chlorophenyl)-4,5-dihydro-1-phenyl-1H-pyrazolo[3,4-a]acridine* (6c):

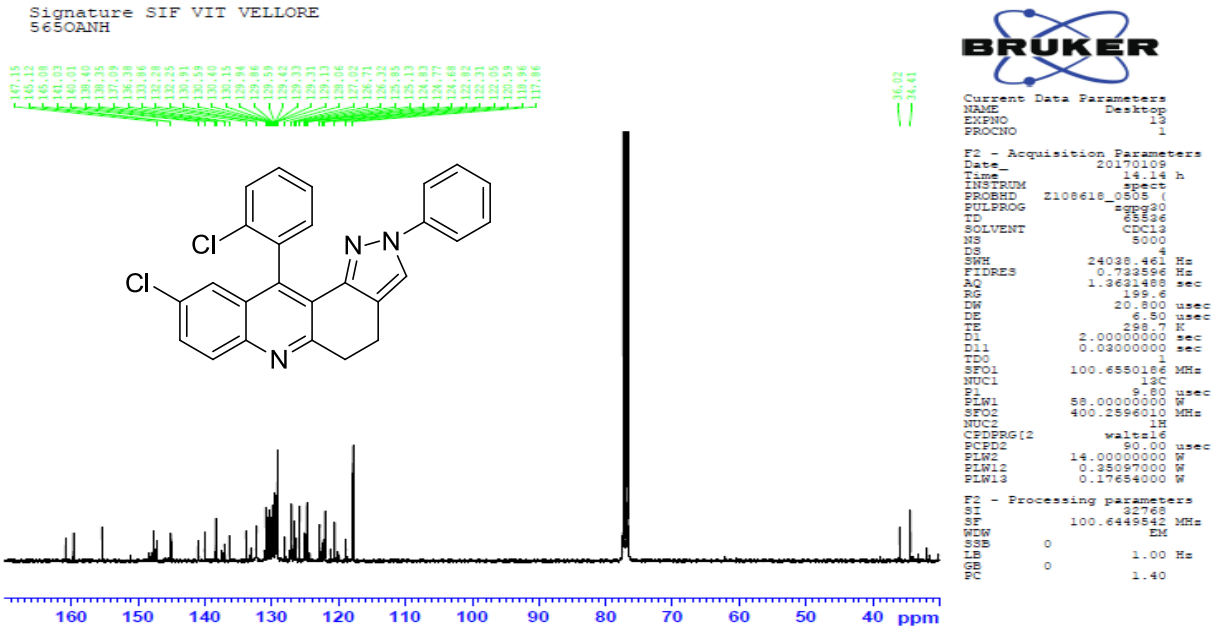

Figure 96: ^{13}C NMR spectrum of *9-chloro-11-(2-chlorophenyl)-4,5-dihydro-1-phenyl-1H-pyrazolo[3,4-a]acridine* (6c):

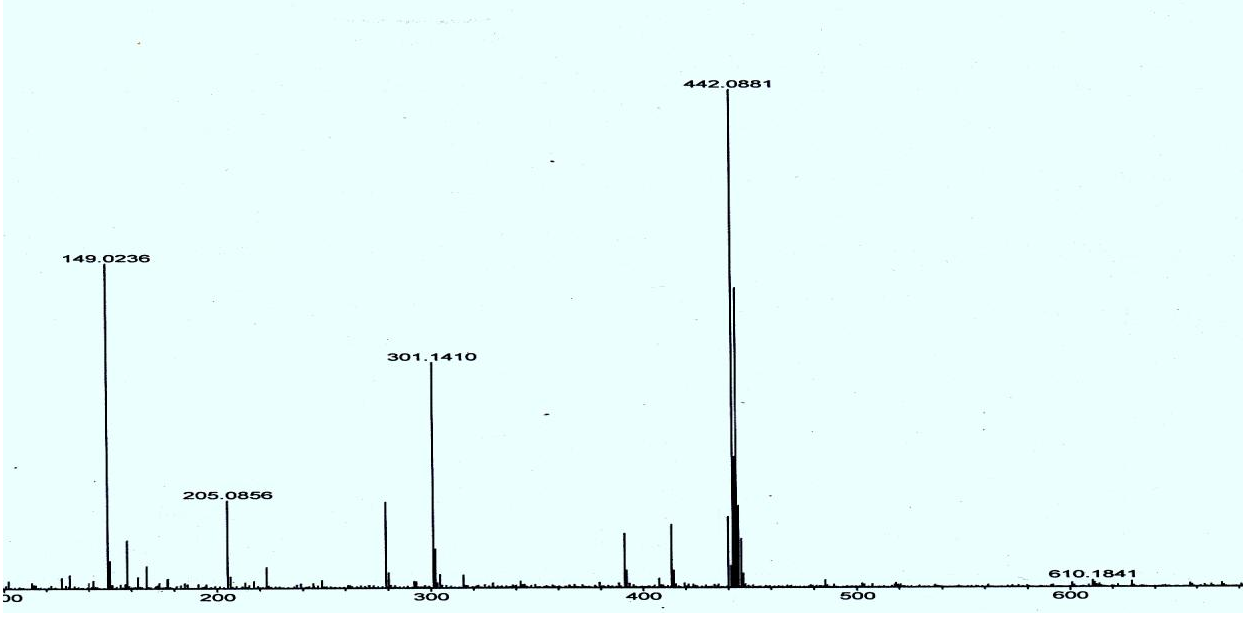

Figure 97: HRMS of *9-chloro-11-(2-chlorophenyl)-4,5-dihydro-1-phenyl-1H-pyrazolo[3,4-a]acridine* (6c):