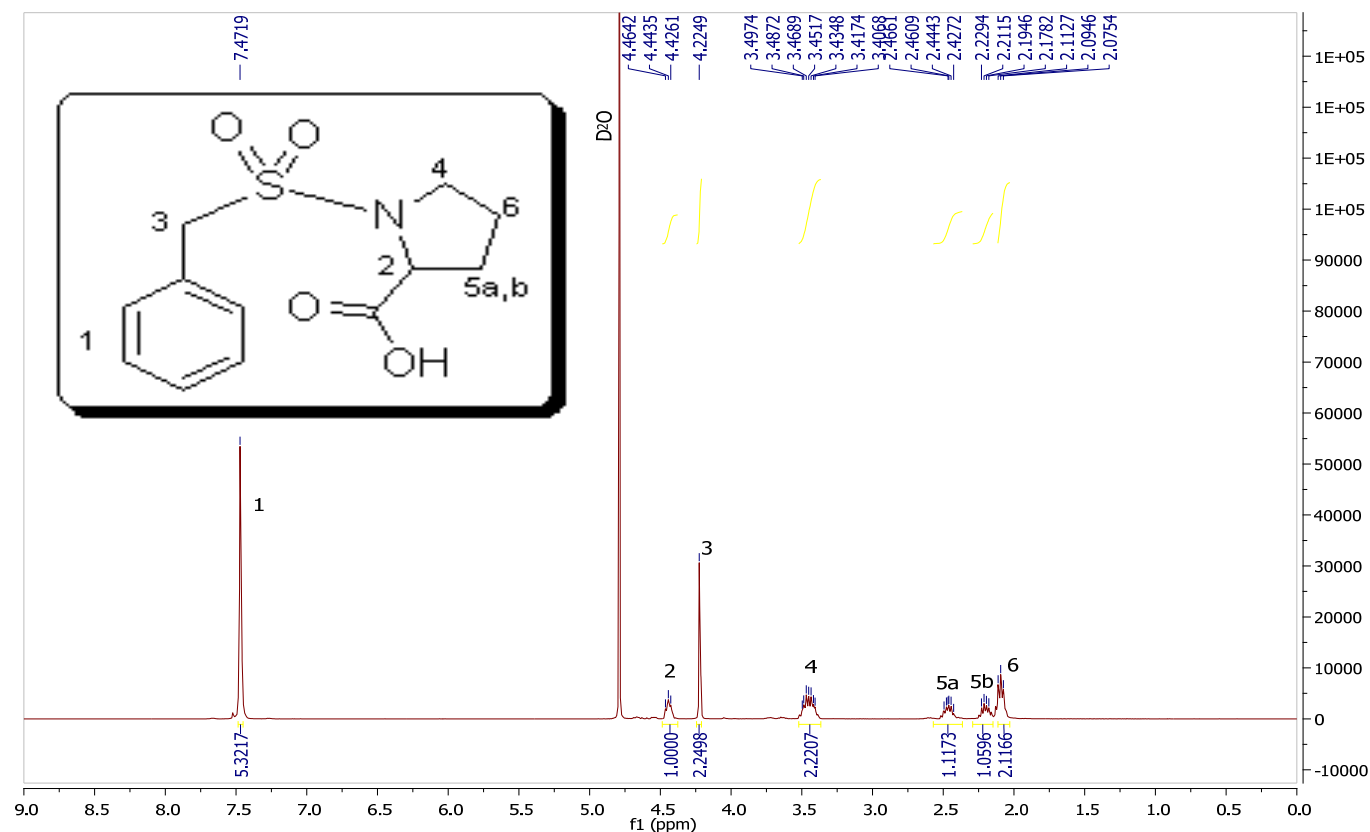


Supporting Information

Ecofriendly Synthesis in Aqueous Medium: An Expedient Approach to New *N,N*-Diethyl Amide Bearing BenzenemethanesulfonamidesOlayinka O. Ajani*¹, Oluwole B. Familoni², Johnbull O. Echeme¹ and Feipeng Wu³¹Department of Chemistry, Covenant University, Canaanland, Km 10 Idiroko Road, P.M.B. 1023, Ota, Ogun State, Nigeria.²Department of Chemistry, University of Lagos, Akoka, Yaba, Lagos State, Nigeria³New Functional Polymeric Material Group, Technical Institute of Physics and Chemistry, Chinese Academy of Science (CAS), Beijing 100190, P.R. China**Fig. (S1).** ¹H NMR spectrum (400 MHz, D₂O) of 1-(benzylsulfonyl)pyrrolidine-2-carboxylic acid (1a).

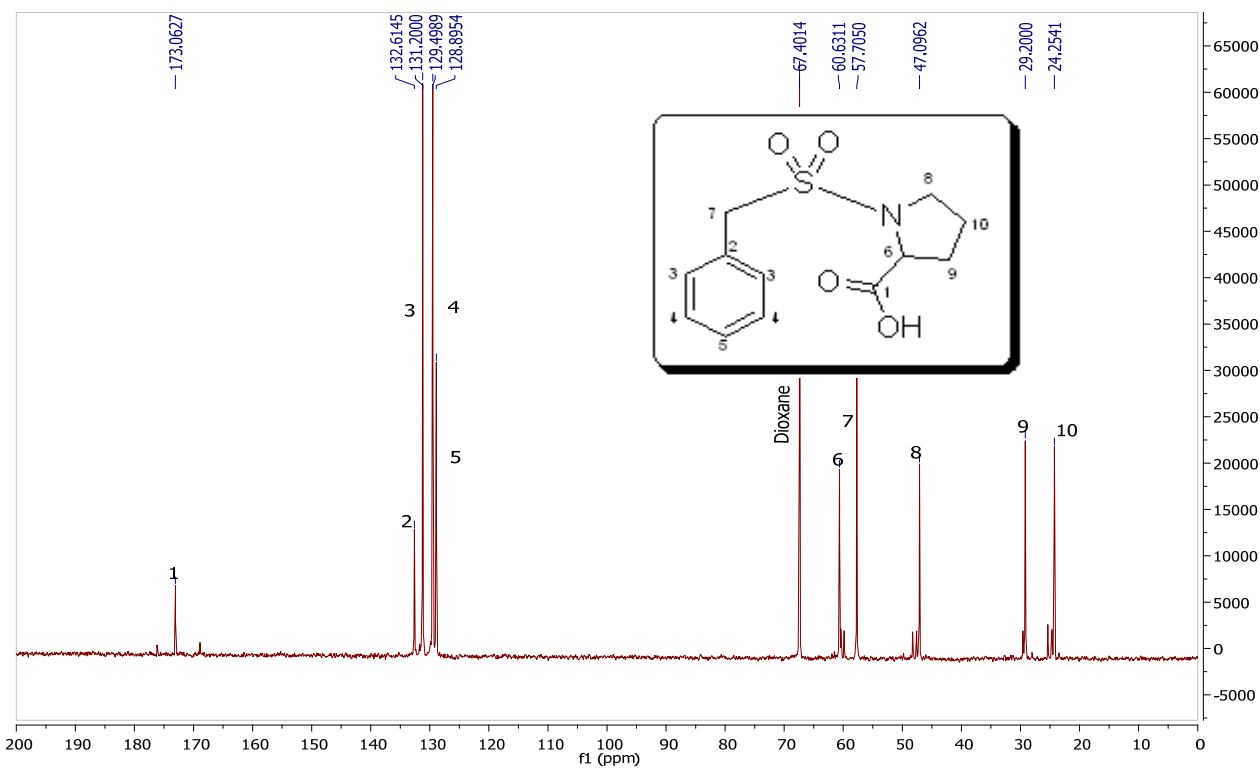


Fig. (S2). ^{13}C NMR spectrum (100 MHz, Dioxane) of 1-(benzylsulfonyl)pyrrolidine-2-carboxylic acid (**1a**).

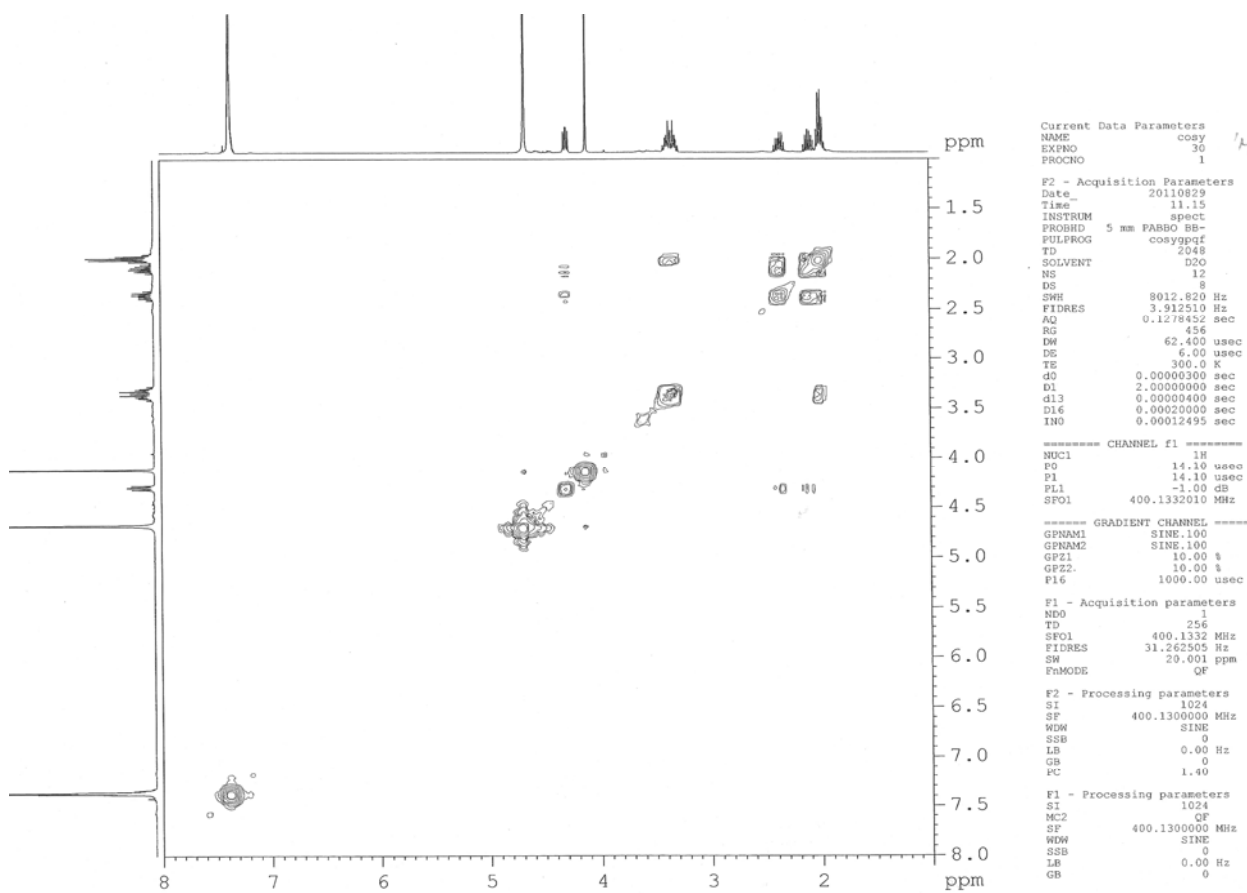


Fig. (S3). ^1H - ^1H COSY NMR spectrum (400 MHz, D_2O) of 1-(benzylsulfonyl)pyrrolidine-2-carboxylic acid (**1a**).

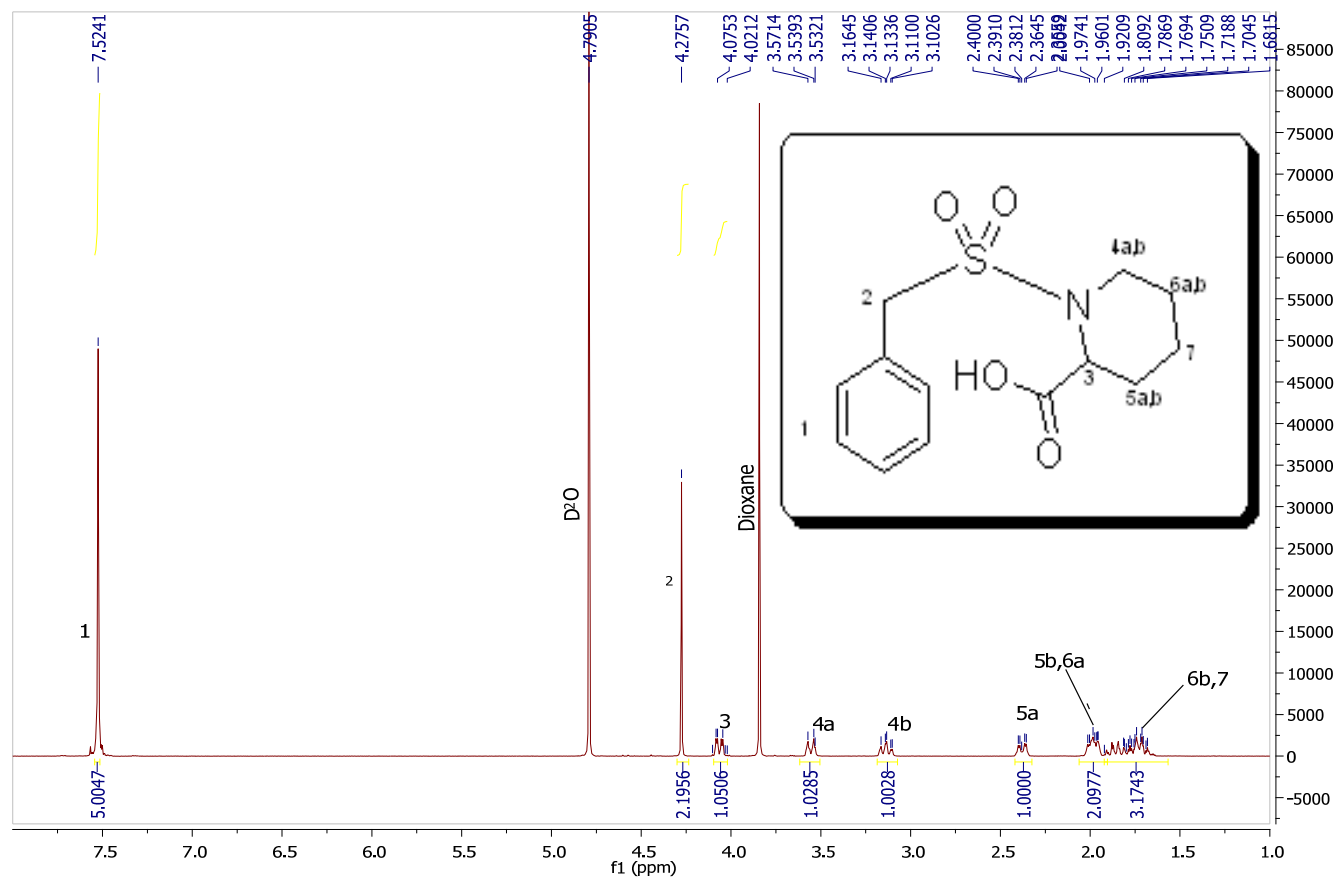


Fig. (S4). ¹H NMR spectrum (400 MHz, D₂O) of 1-(benzylsulfonyl)piperidine-2-carboxylic acid (1b).

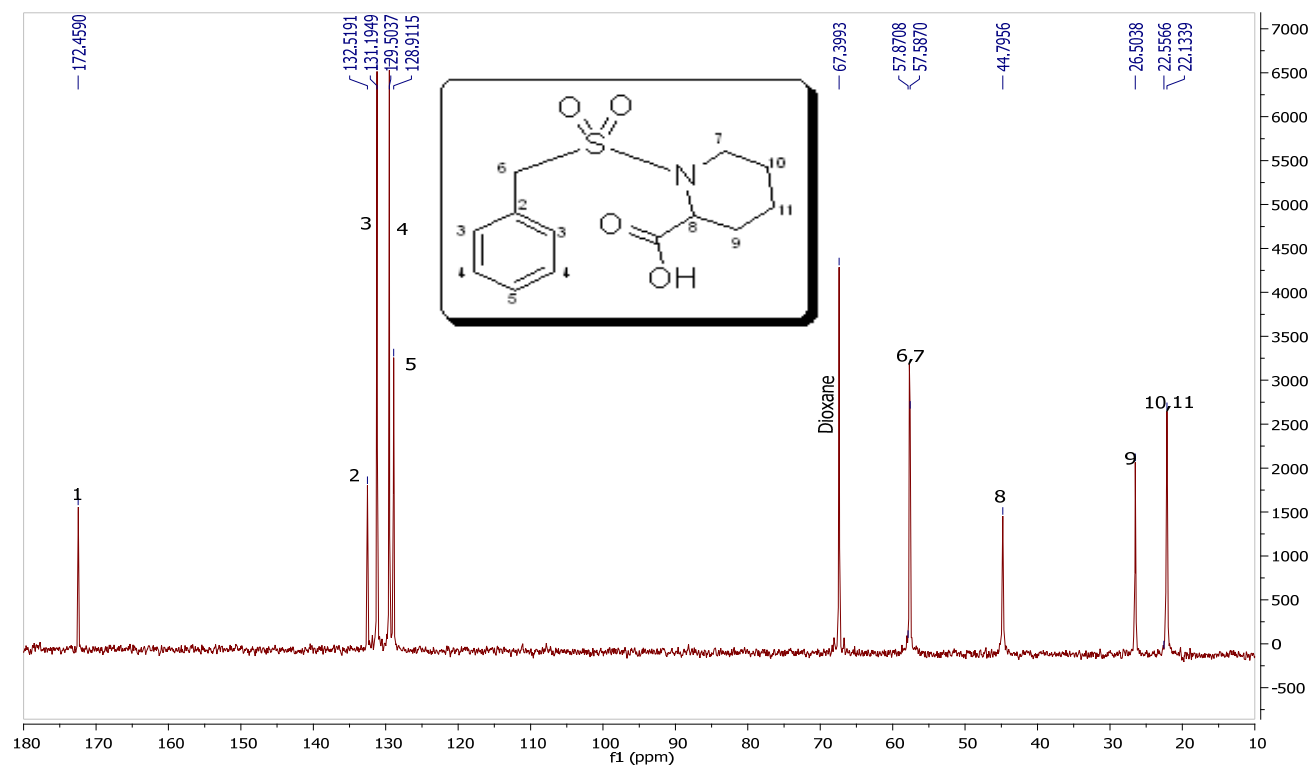
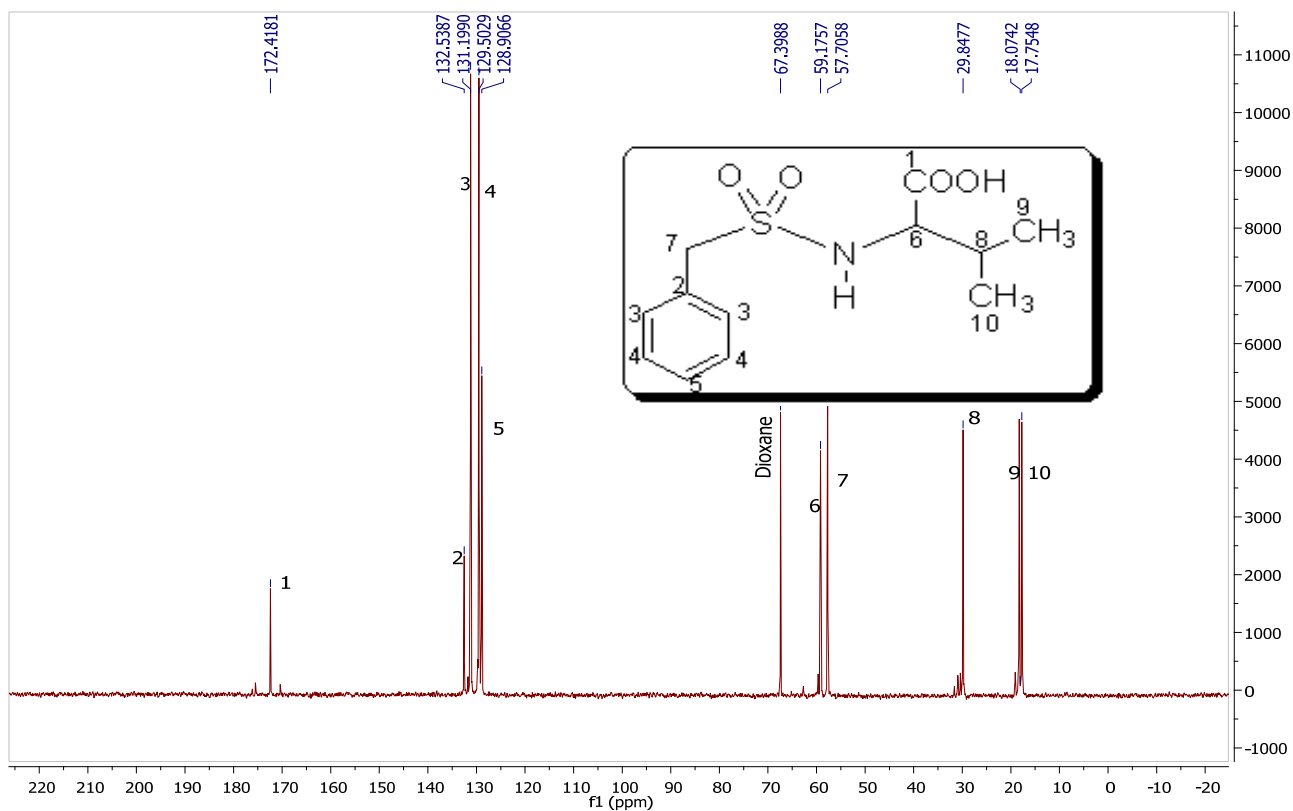
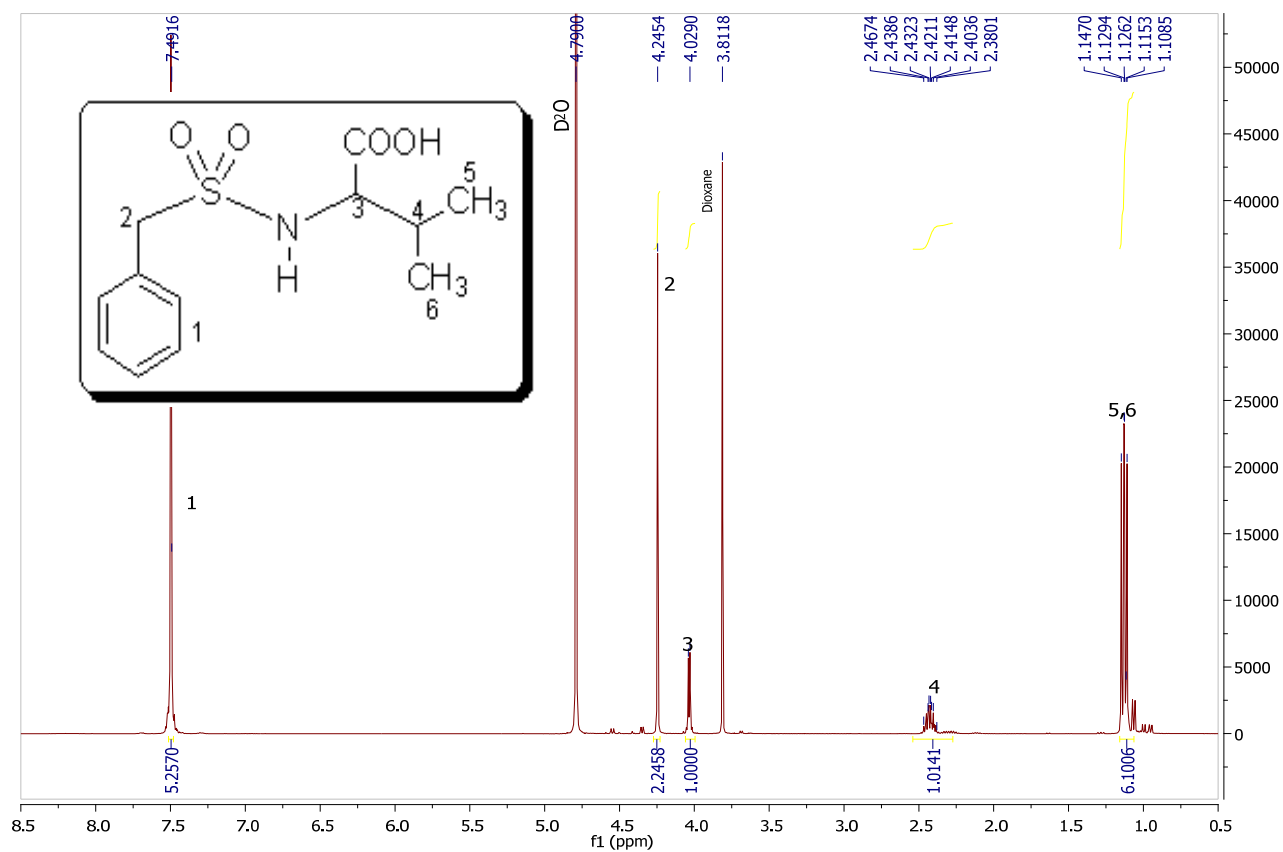


Fig. (S5). ¹³C NMR spectrum (100 MHz, Dioxane) of 1-(benzylsulfonyl)piperidine-2-carboxylic acid (1b).



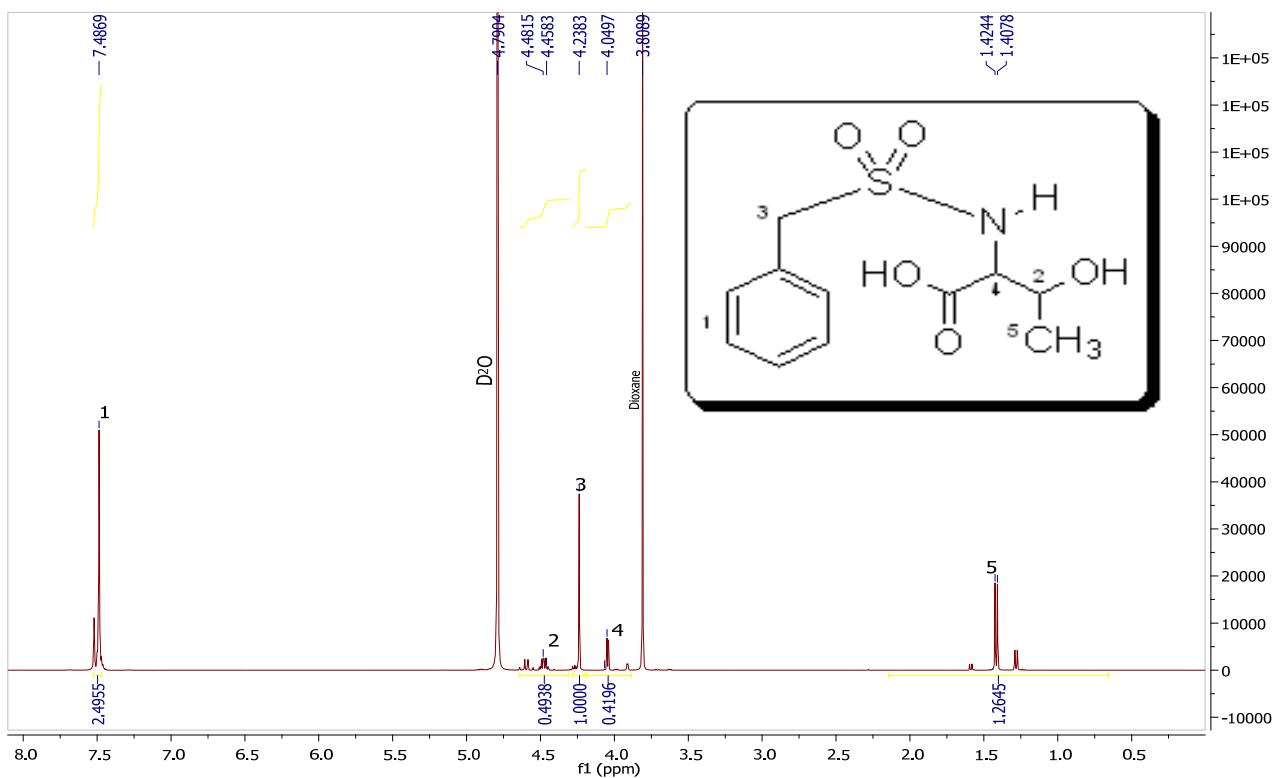


Fig. (S8). ^1H NMR spectrum (400 MHz, D_2O) of 3-hydroxy-2-(phenylmethylsulfonamido)butanoic acid (**1h**).

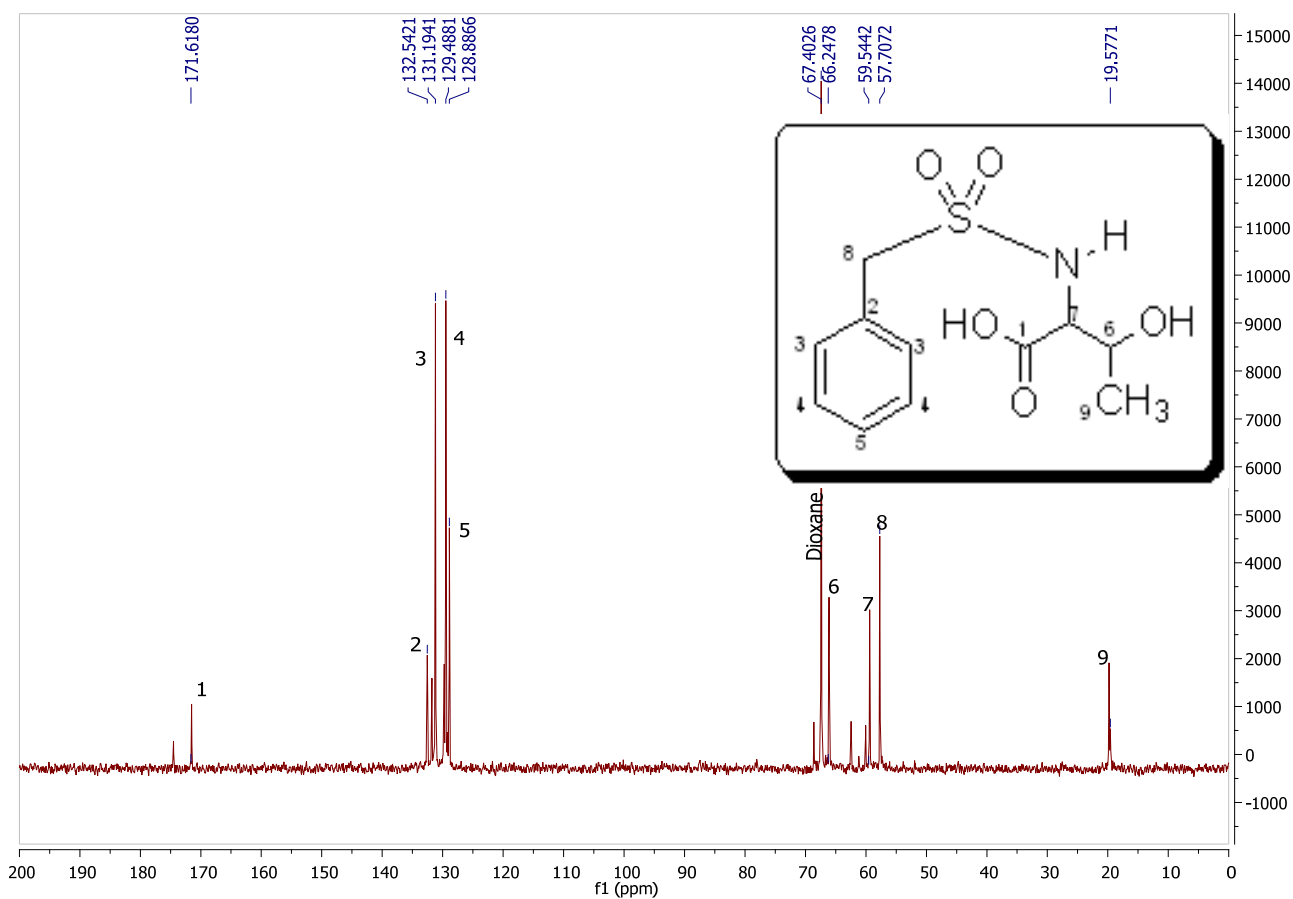


Fig. (S9). ^{13}C NMR spectrum (100 MHz, Dioxane) of 3-hydroxy-2-(phenylmethylsulfonamido)butanoic acid (**1h**).

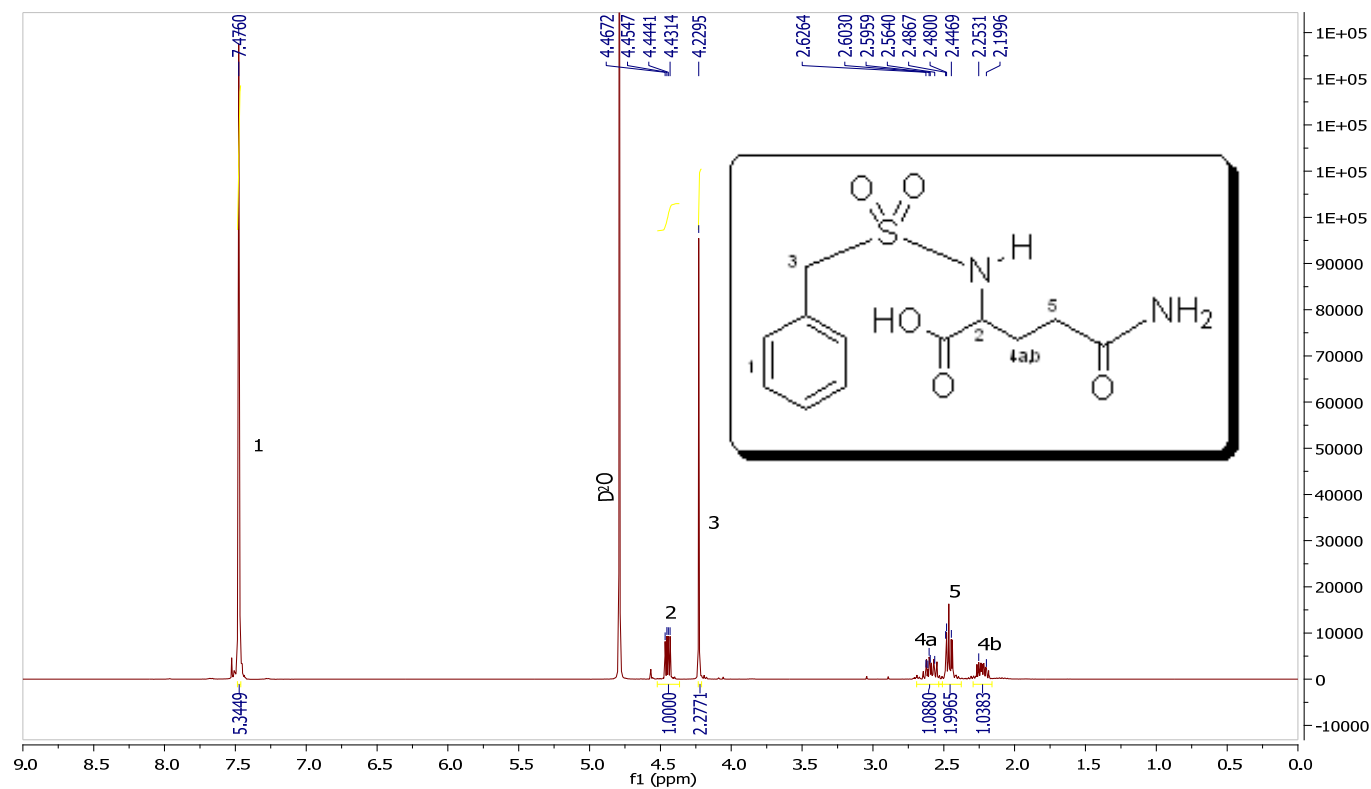


Fig. (S10). ^1H NMR spectrum (400 MHz, D_2O) of 5-amino-5-oxo-2-(phenylmethylsulfonamido)pentanoic acid (**Ii**).

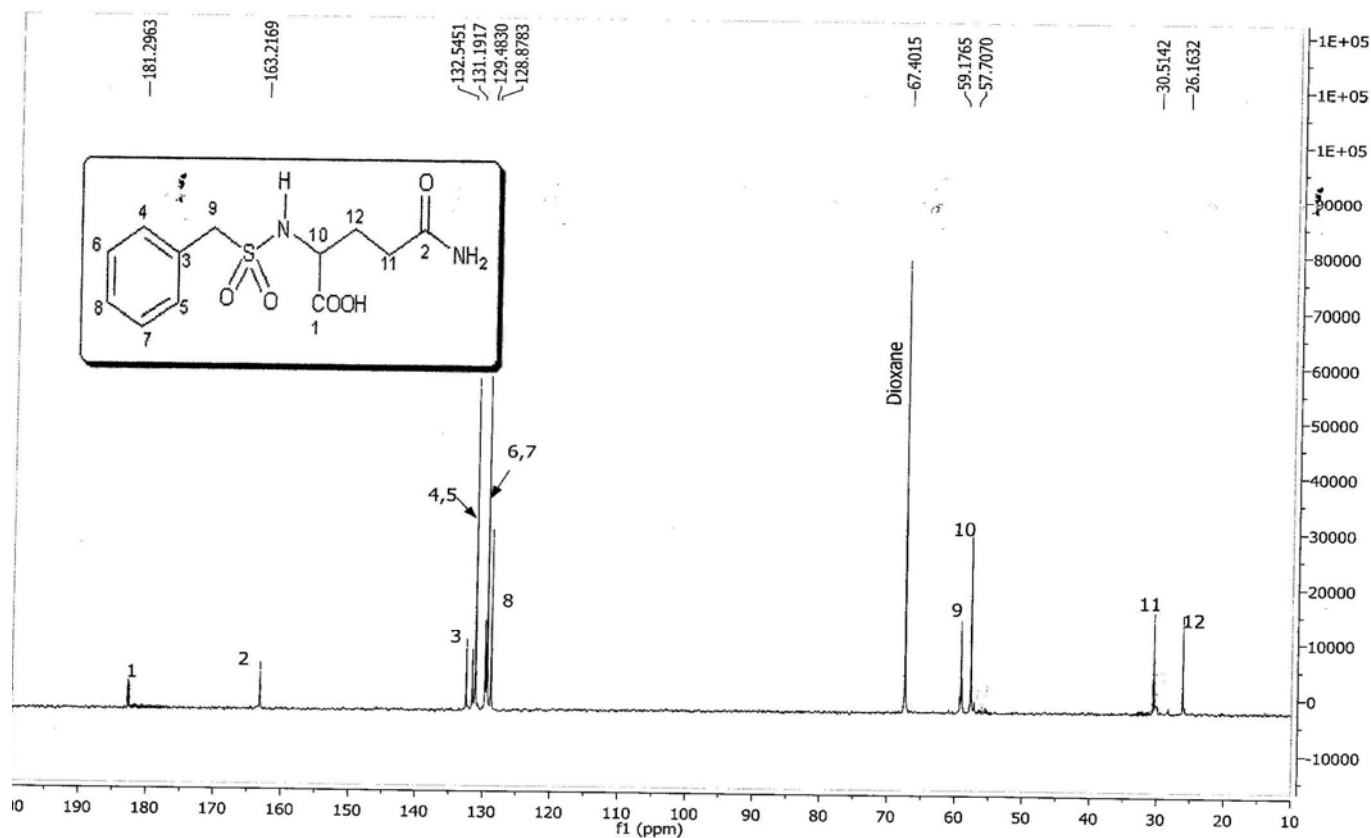


Fig. (S11). ^{13}C NMR spectrum (100 MHz, Dioxane) of 5-amino-5-oxo-2-(phenylmethylsulfonamido)pentanoic acid (**Ii**).

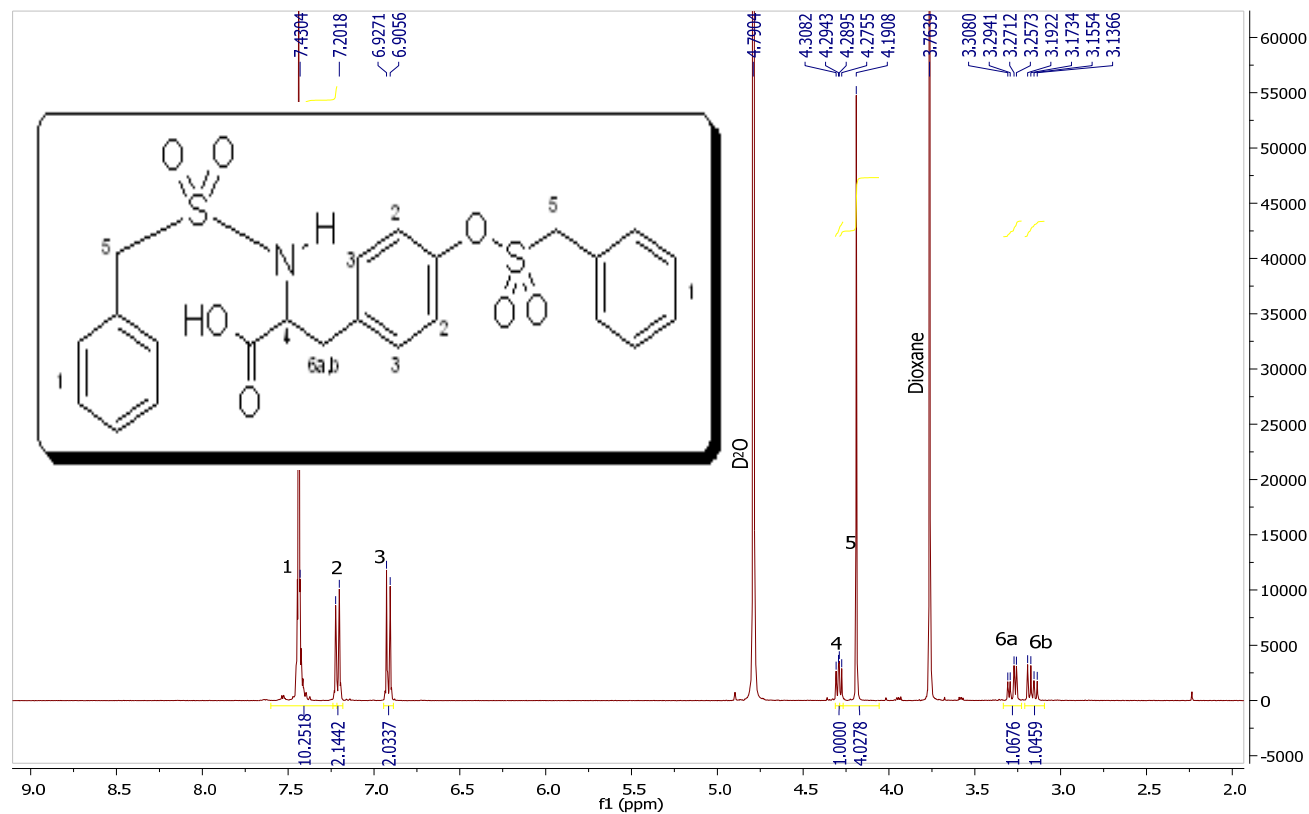


Fig. (S12). ¹H NMR spectrum (400 MHz, D₂O) of 3-(4-(benzylsulfonyloxy)phenyl)-2-(phenylmethyl sulfonamido)propanoic acid (**1k**).

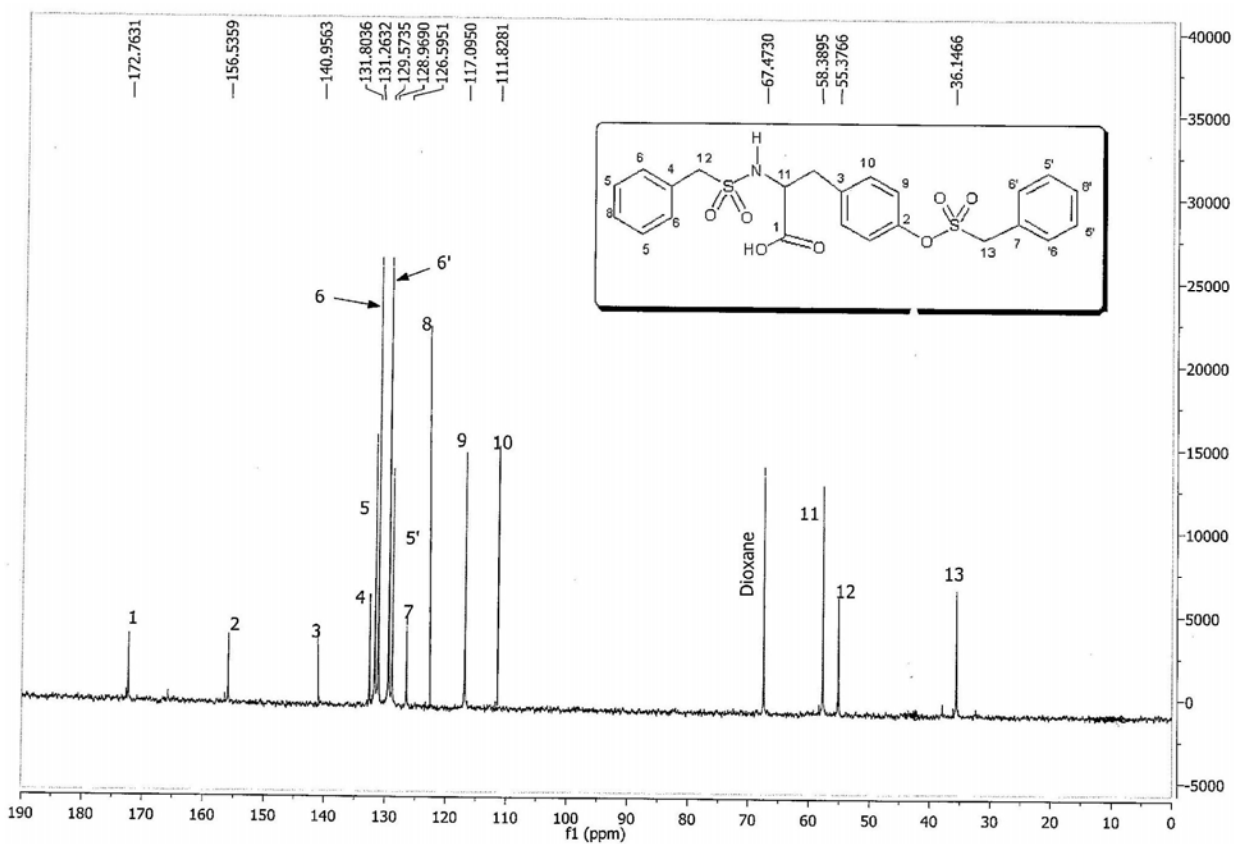


Fig. (S13). ¹³C NMR spectrum (100 MHz, Dioxane) of 3-(4-(benzylsulfonyloxy)phenyl)-2-(phenylmethyl sulfonamido)propanoic acid (**1k**).

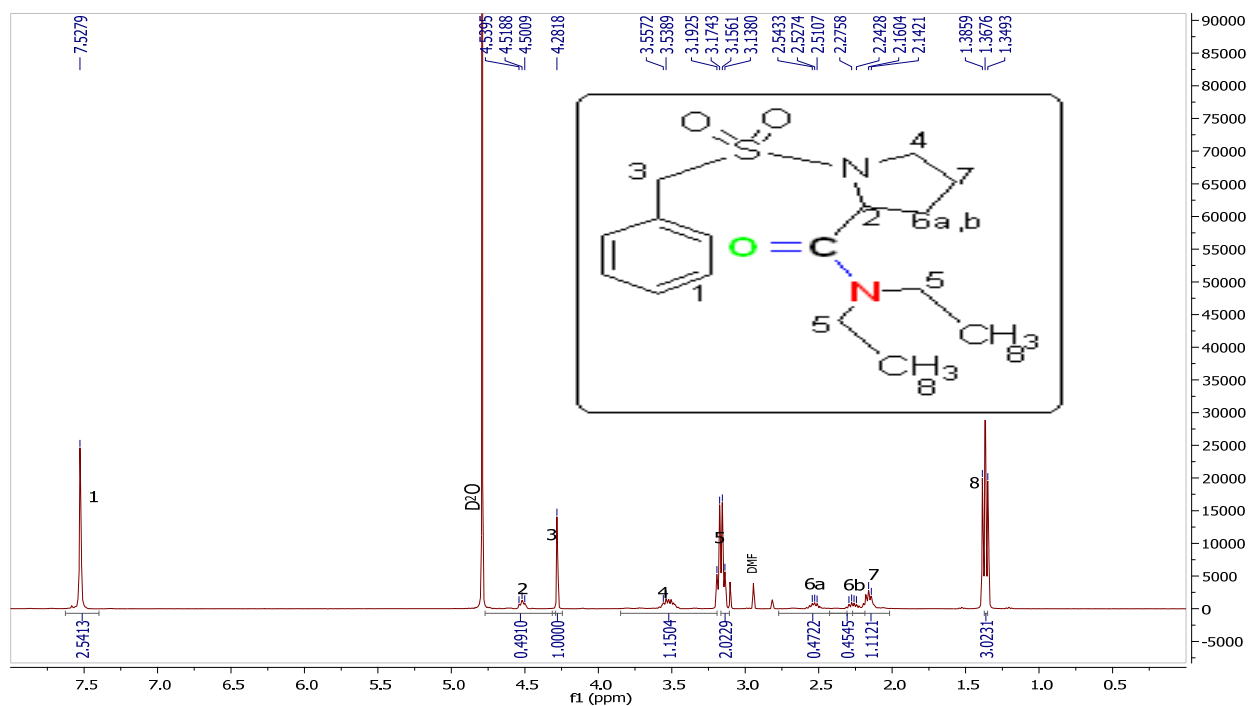


Fig. (S14). ¹H NMR spectrum (400 MHz, D₂O) of 1-(benzylsulfonyl)-*N,N*-diethylpyrrolidine-2-carboxamide (2a).

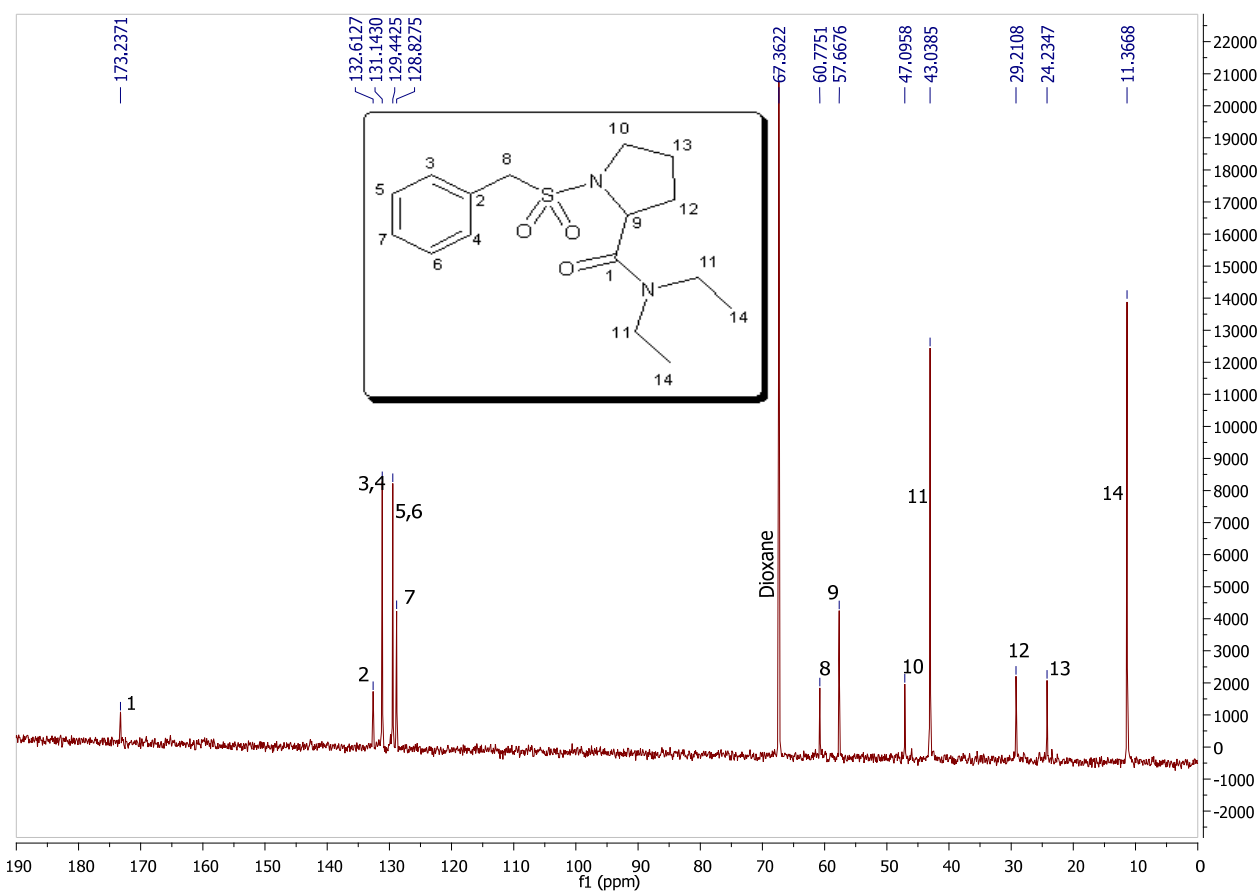


Fig. (S15). ¹³C NMR spectrum (100 MHz, Dioxane) of 1-(benzylsulfonyl)-*N,N*-diethylpyrrolidine-2-carboxamide (2a).

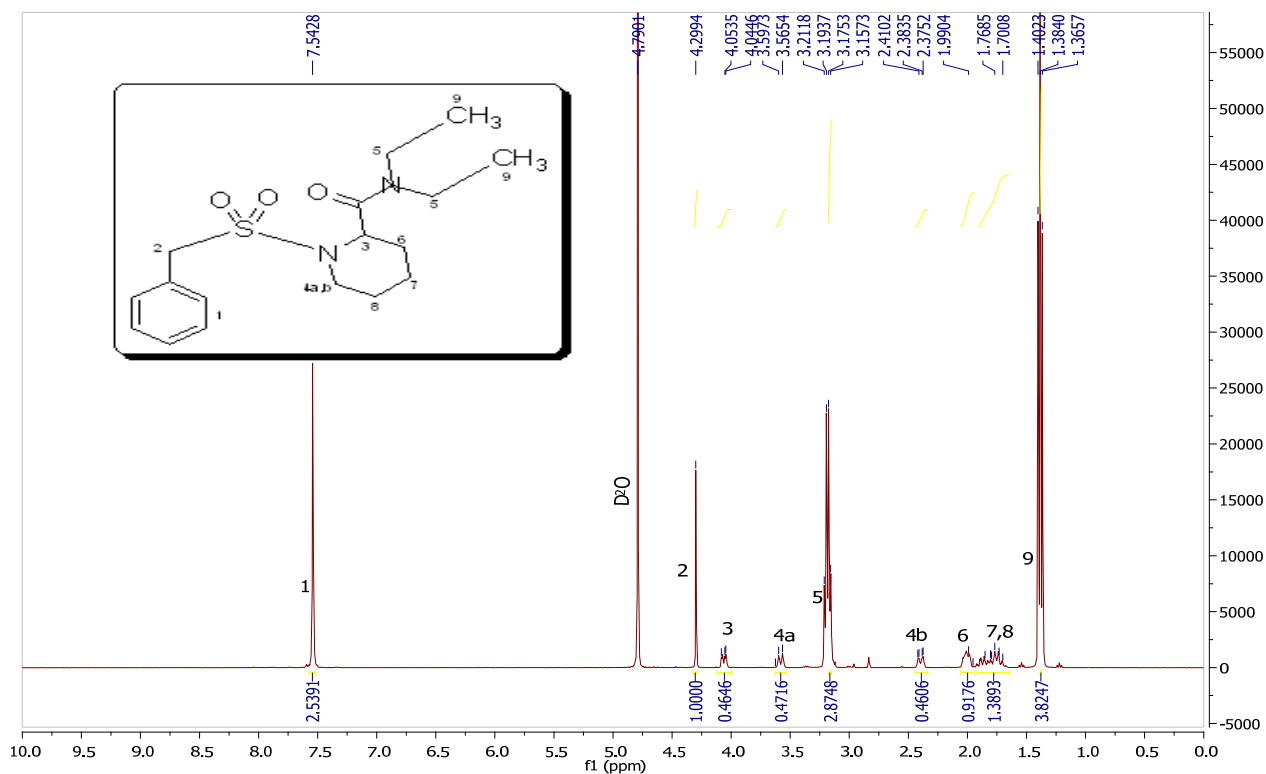


Fig. (S16). ¹H NMR spectrum (400 MHz, D₂O) of 1-(benzylsulfonyl)-*N,N*-diethylpiperidine-2-carboxamide (2b).

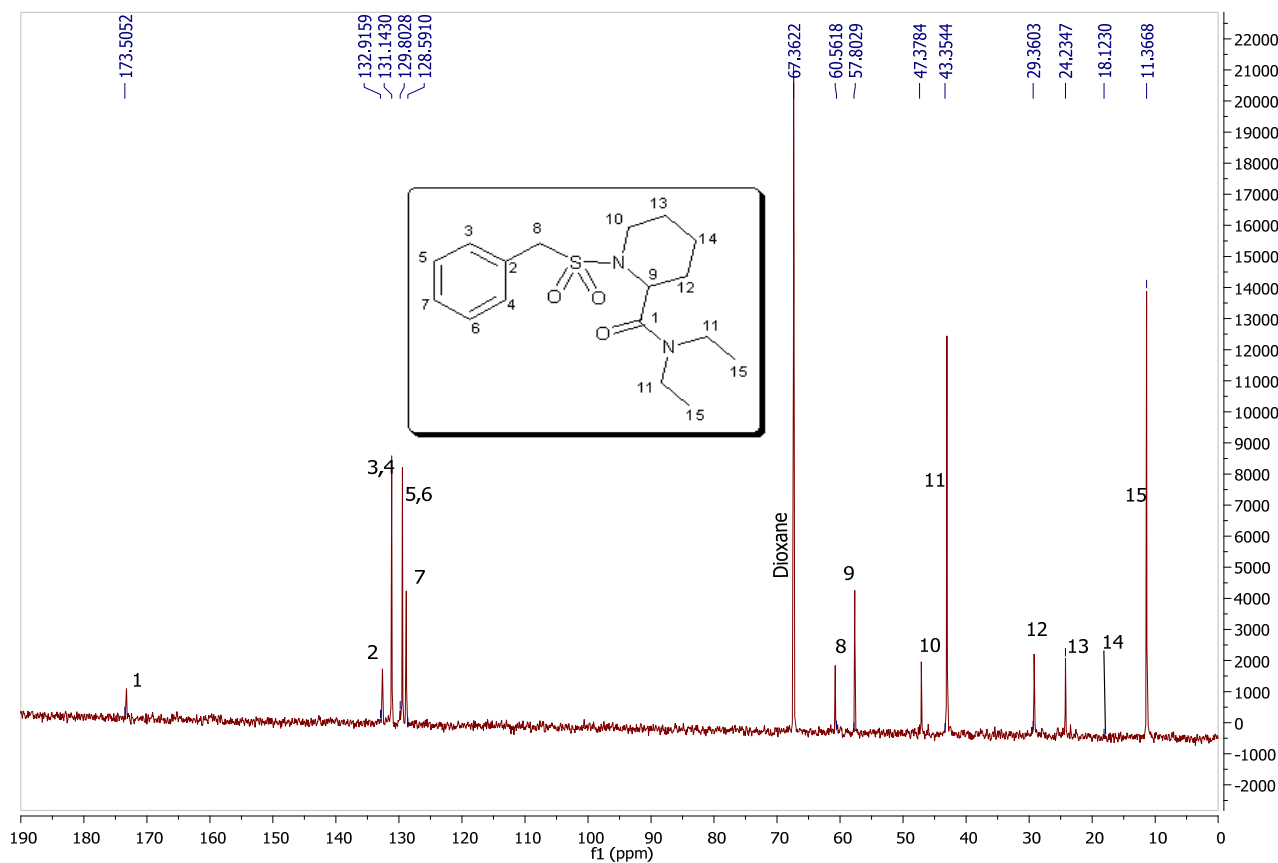


Fig. (S17). ¹³C NMR spectrum (100 MHz, Dioxane) of 1-(benzylsulfonyl)-*N,N*-diethylpiperidine-2-carboxamide (2b).

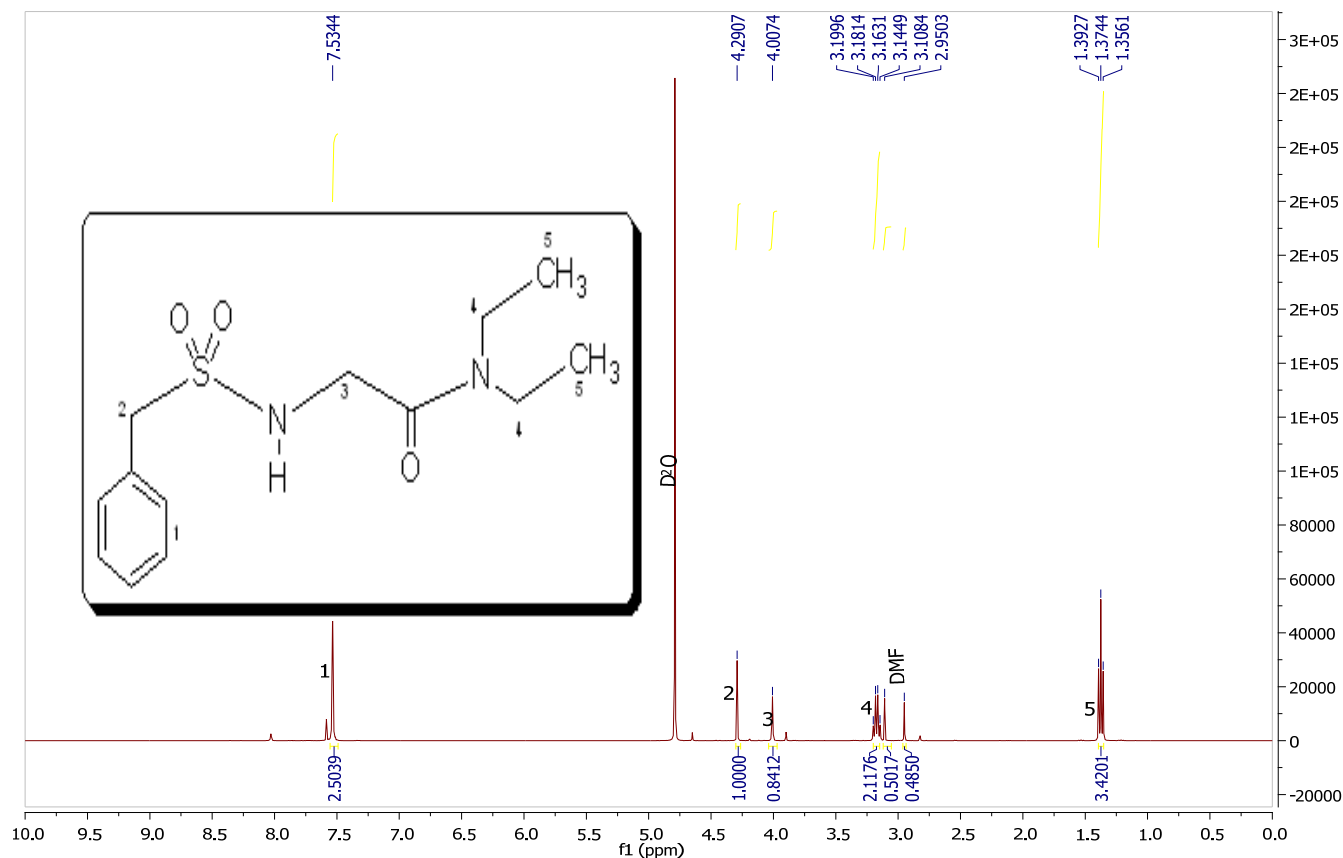


Fig. (S18). ¹H NMR spectrum (400 MHz, D₂O) of *N,N*-diethyl-2-(phenylmethylsulfonamido)acetamide (**2c**).

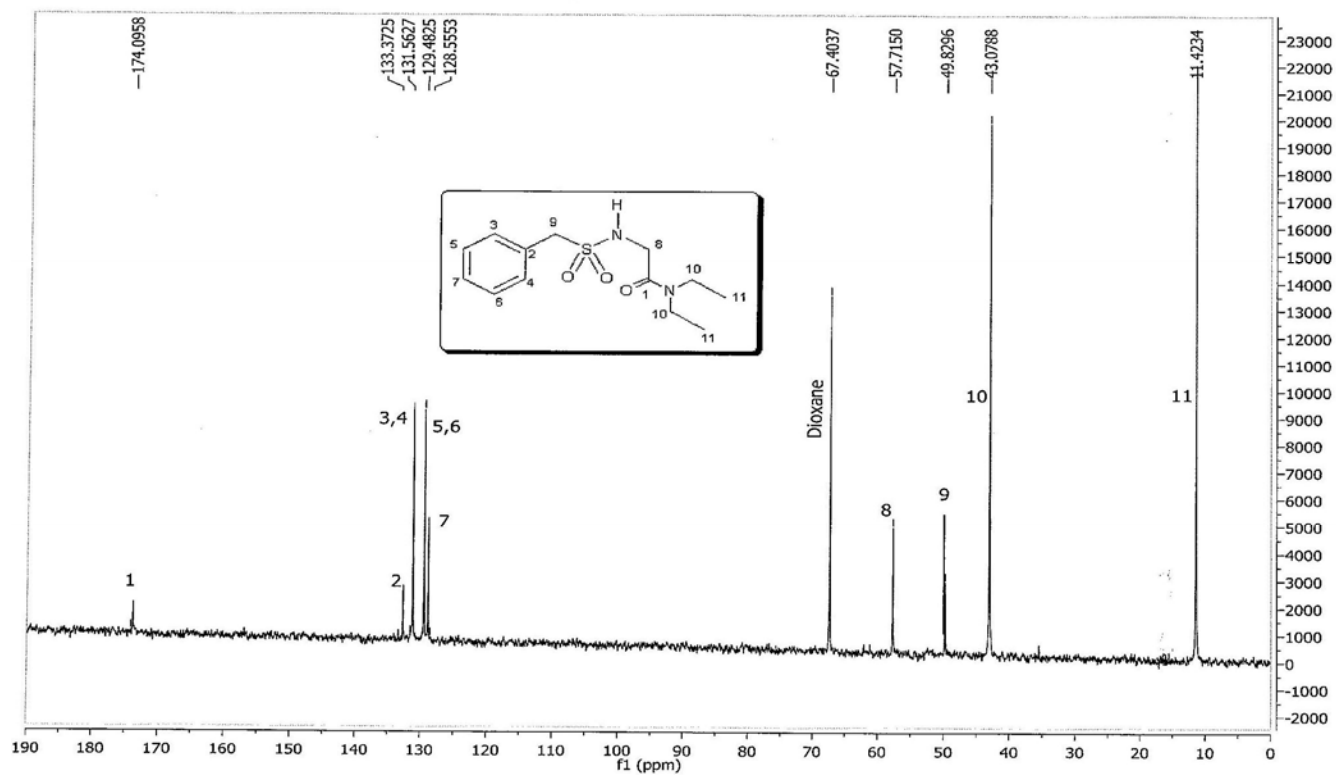


Fig. (S19). ¹³C NMR spectrum (100 MHz, Dioxane) of *N,N*-diethyl-2-(phenylmethylsulfon amido) acetamide (**2c**).

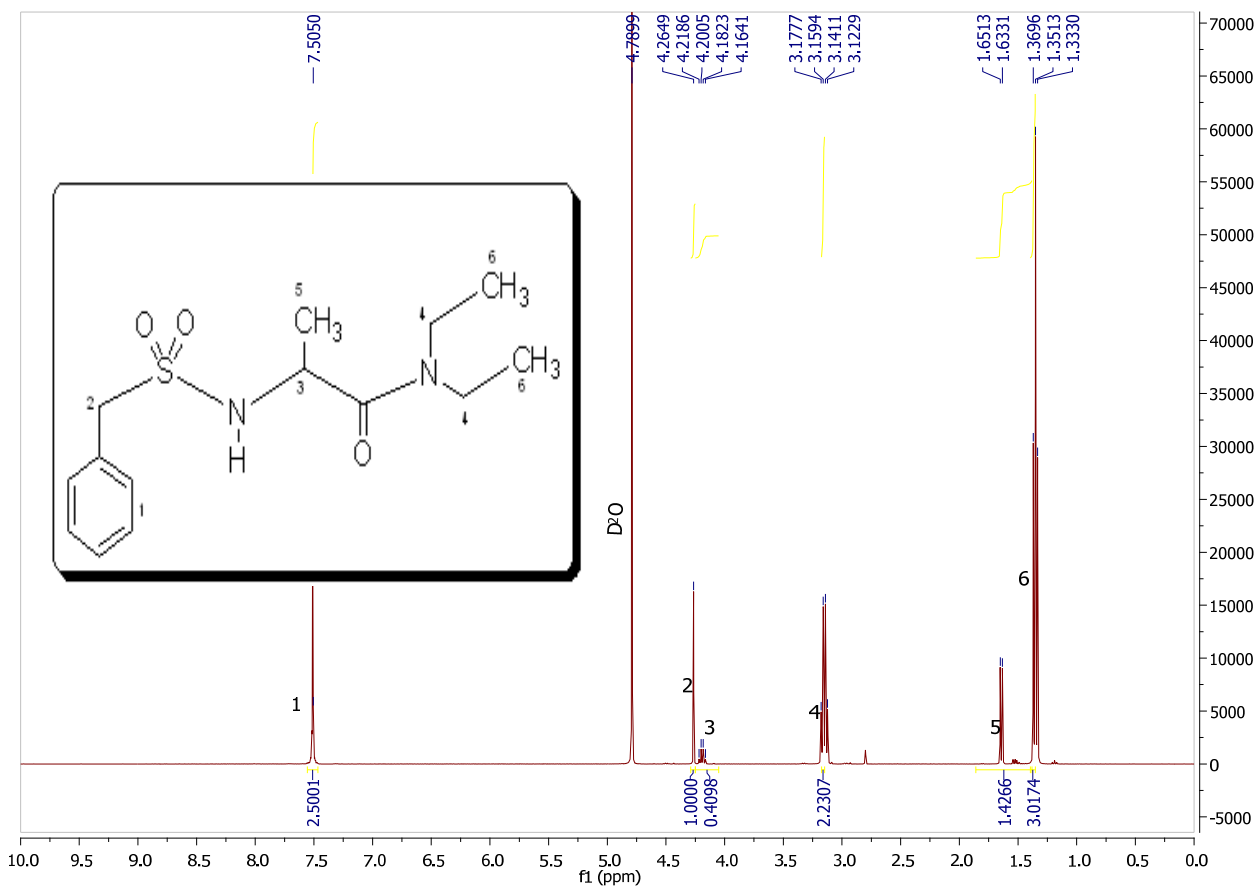


Fig. (S20). ¹H NMR spectrum (400 MHz, D₂O) of *N,N*-diethyl-2-(phenylmethylsulfonyl)propanamide (**2d**).

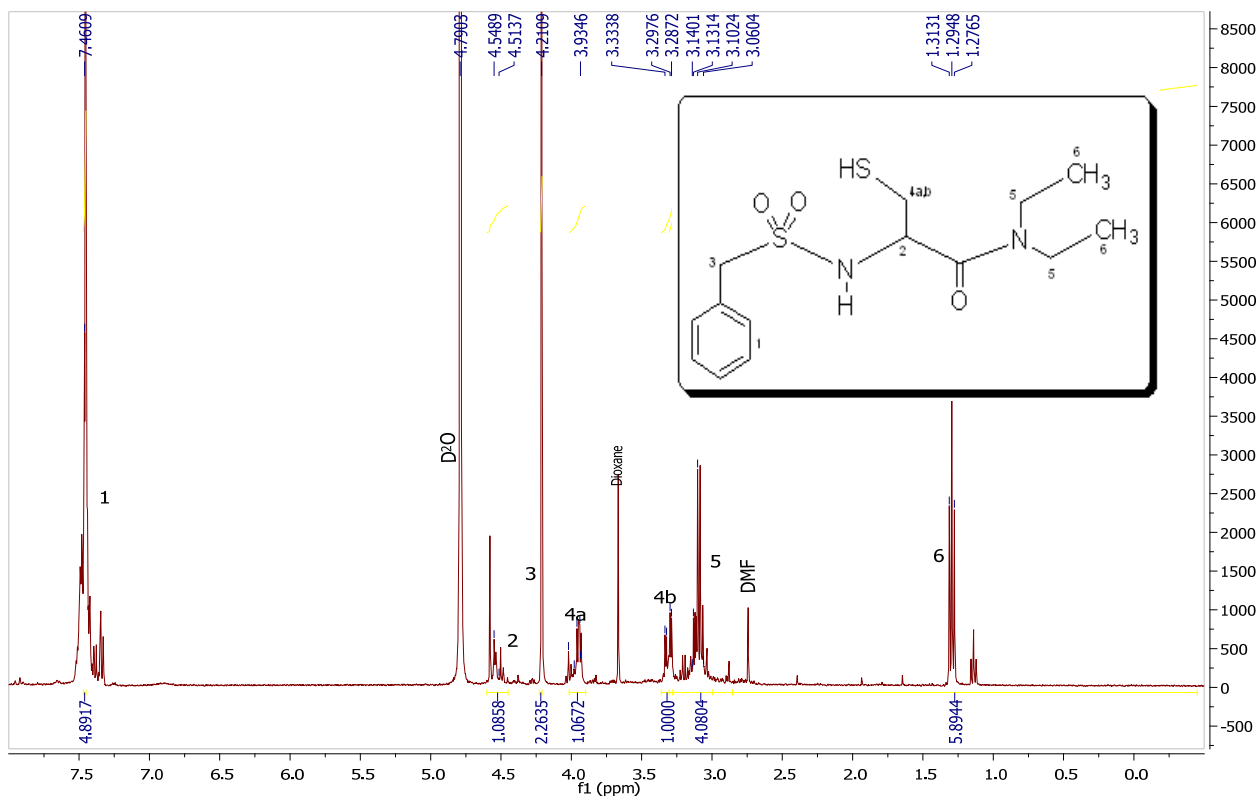


Fig. (S21). ¹H NMR spectrum (400 MHz, D₂O) of *N,N*-diethyl-3-mercapto-2-(phenylmethylsulfonyl)propanamide (**2e**).

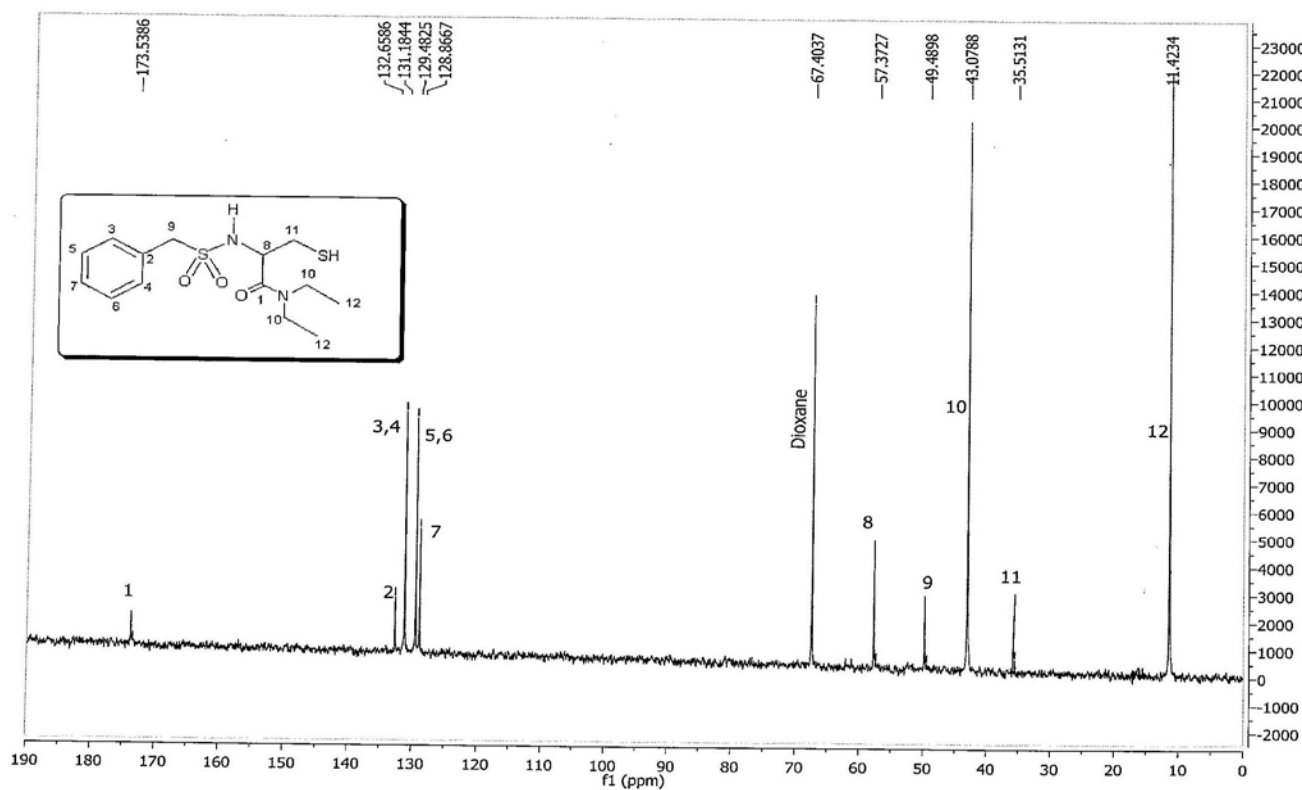


Fig. (S22). ¹³C NMR spectrum (100 MHz, Dioxane) of *N,N*-diethyl-3-mercapto-2-(phenylmethylsulfonyl)propanamide (**2e**).

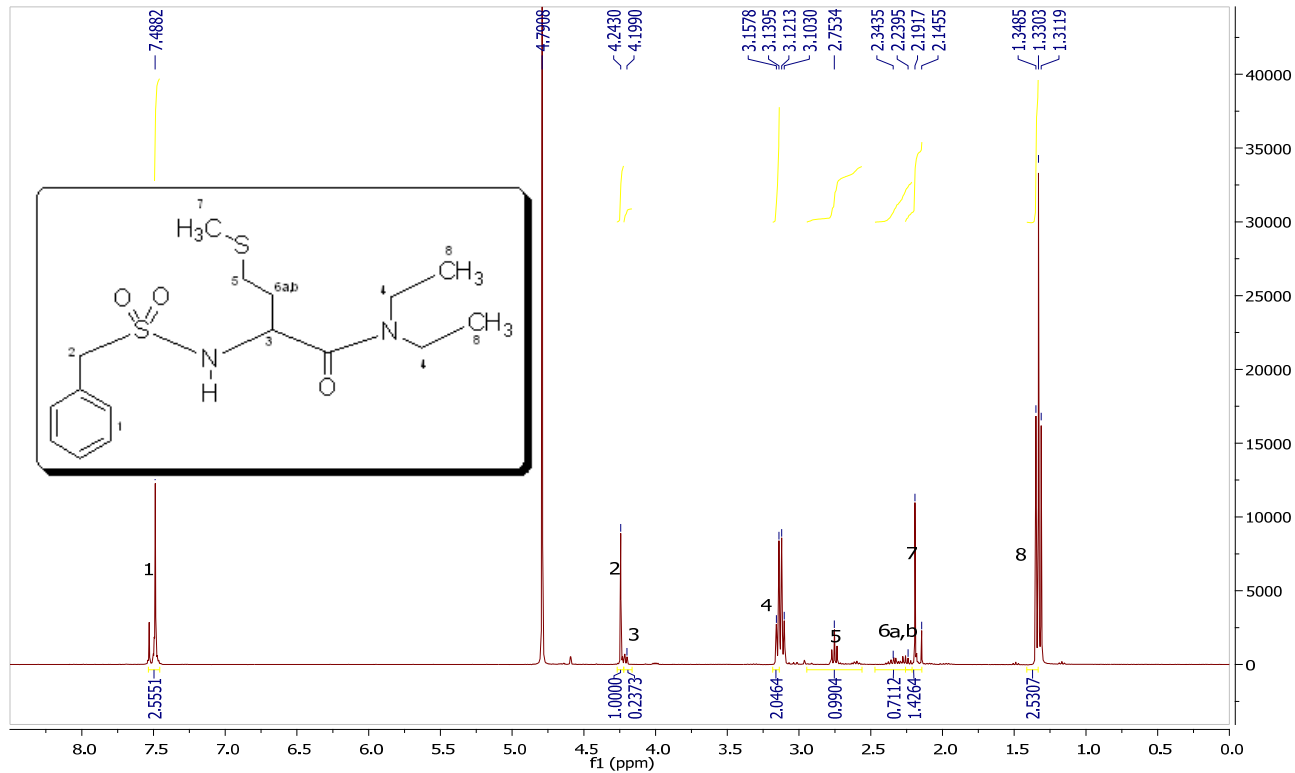


Fig. (S23). ¹H NMR spectrum (400 MHz, D₂O) of *N,N*-diethyl-4-(methylthio)-2-(phenylmethylsulfonyl)butanamide (**2f**).

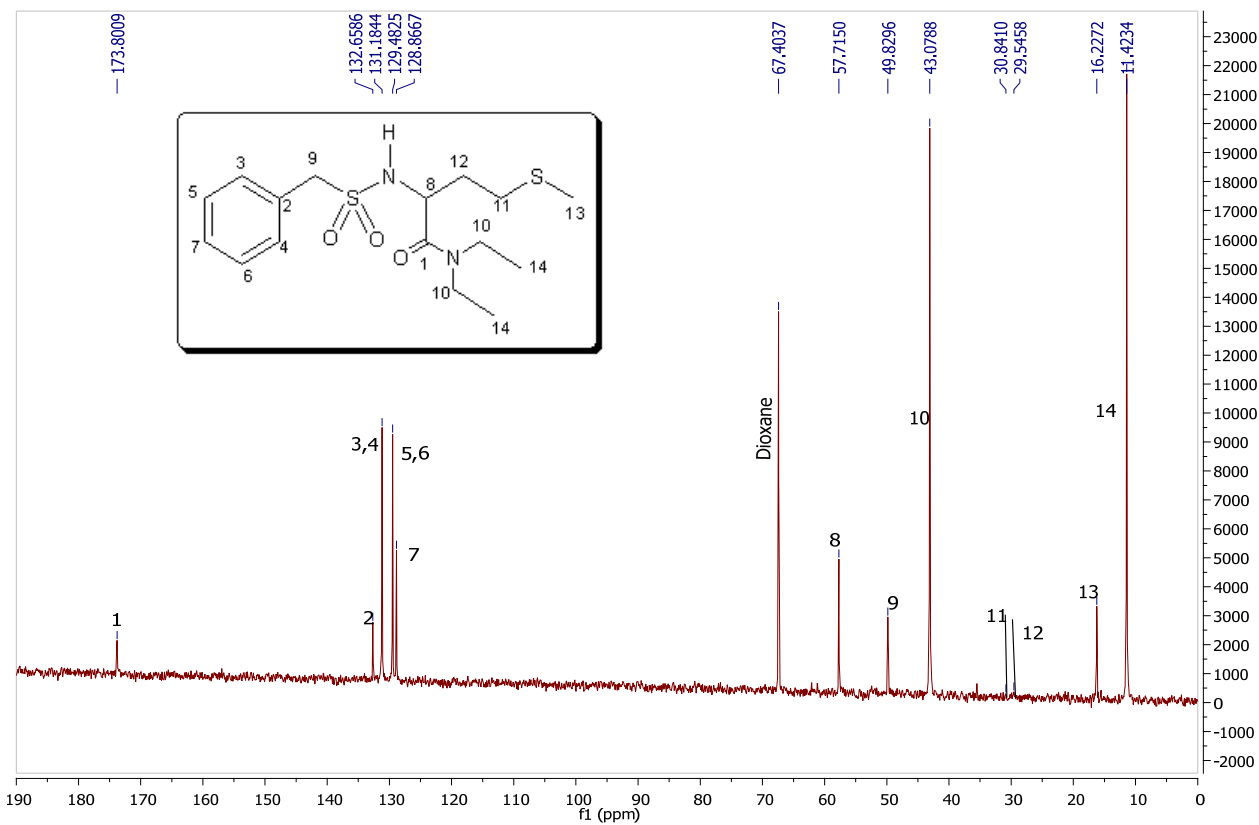


Fig. (S24). ¹³C NMR spectrum (100 MHz, Dioxane) of *N,N*-diethyl-4-(methylthio)-2-(phenylmethyl sulfonamido)butanamide (**2f**).

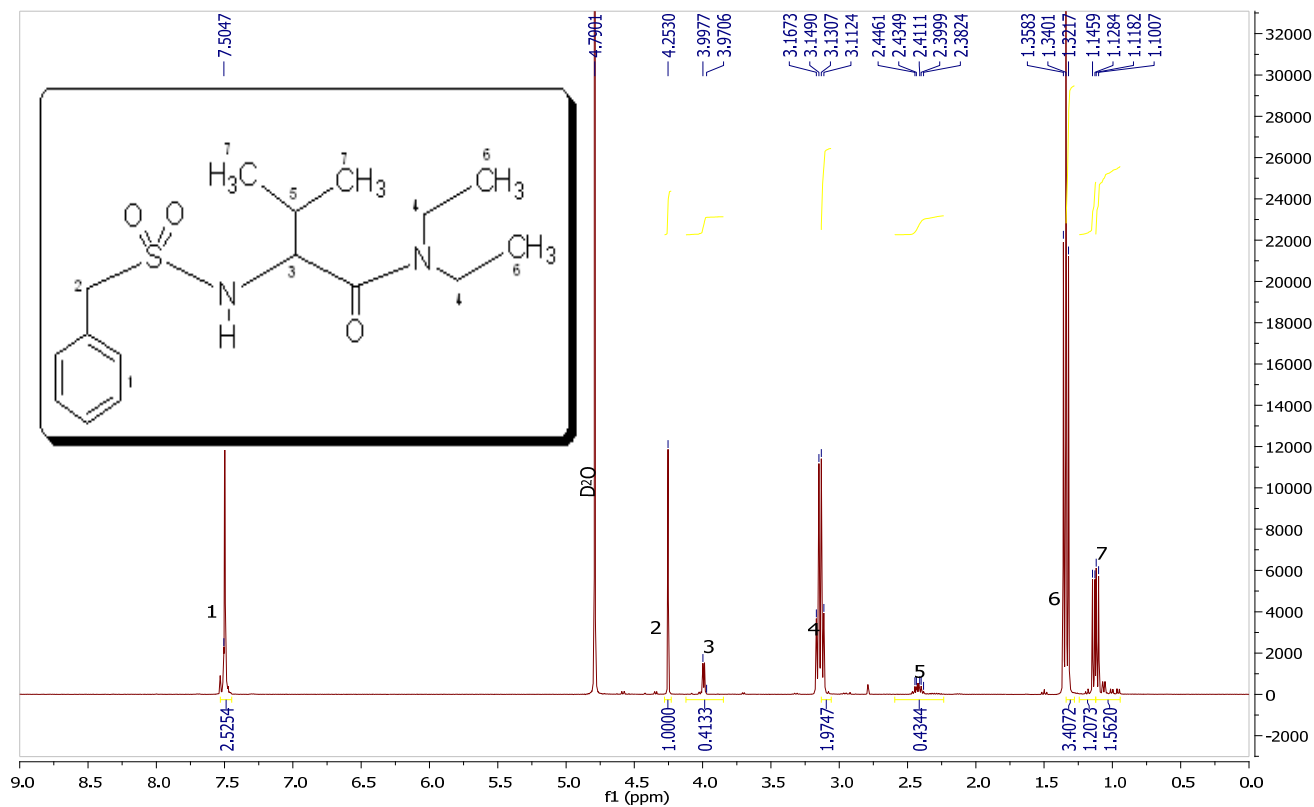


Fig. (S25). ¹H NMR spectrum (400 MHz, D₂O) of *N,N*-diethyl-3-methyl-2-(phenylmethylsulfonamido)butanamide (**2g**).

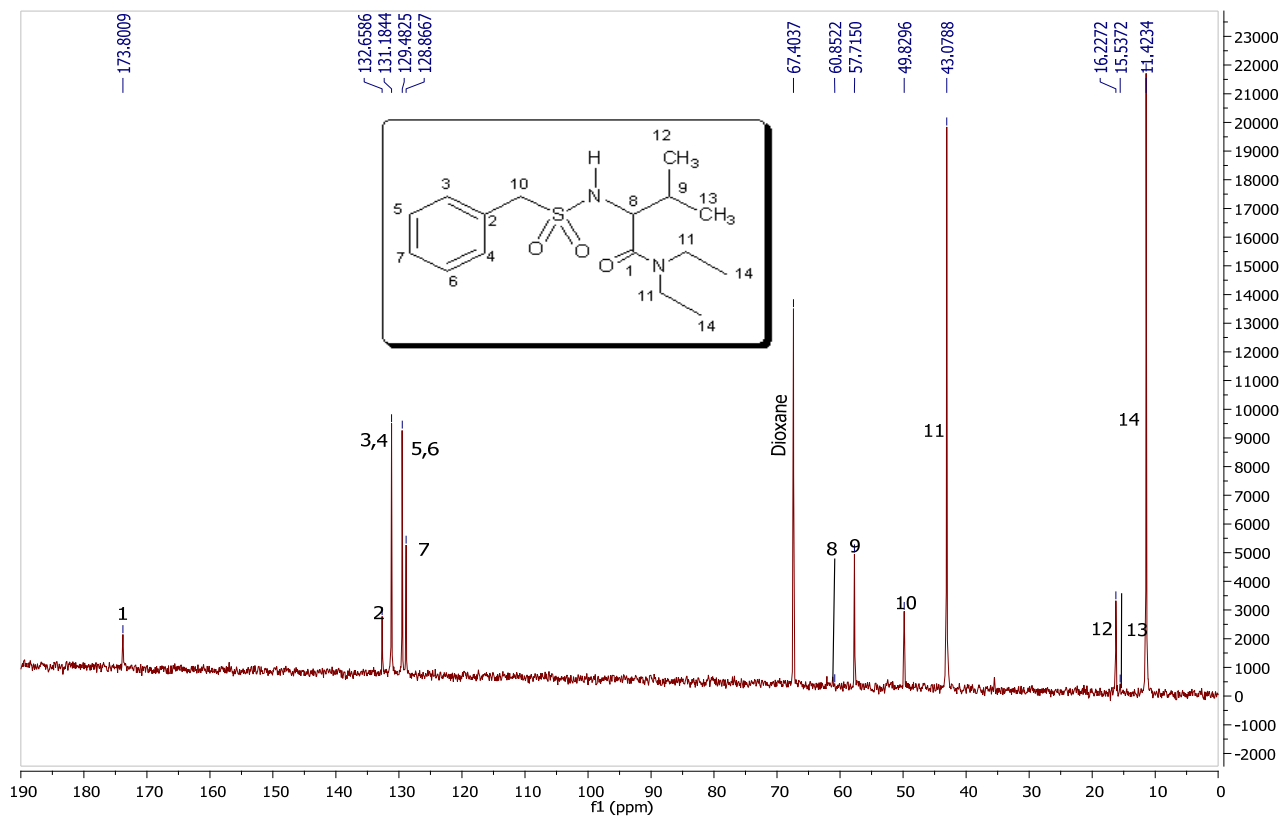


Fig. (S26). ^{13}C NMR spectrum (100 MHz, Dioxane) of *N,N*-diethyl-3-methyl-2-(phenylmethyl sulfonamido) butanamide (**2g**).

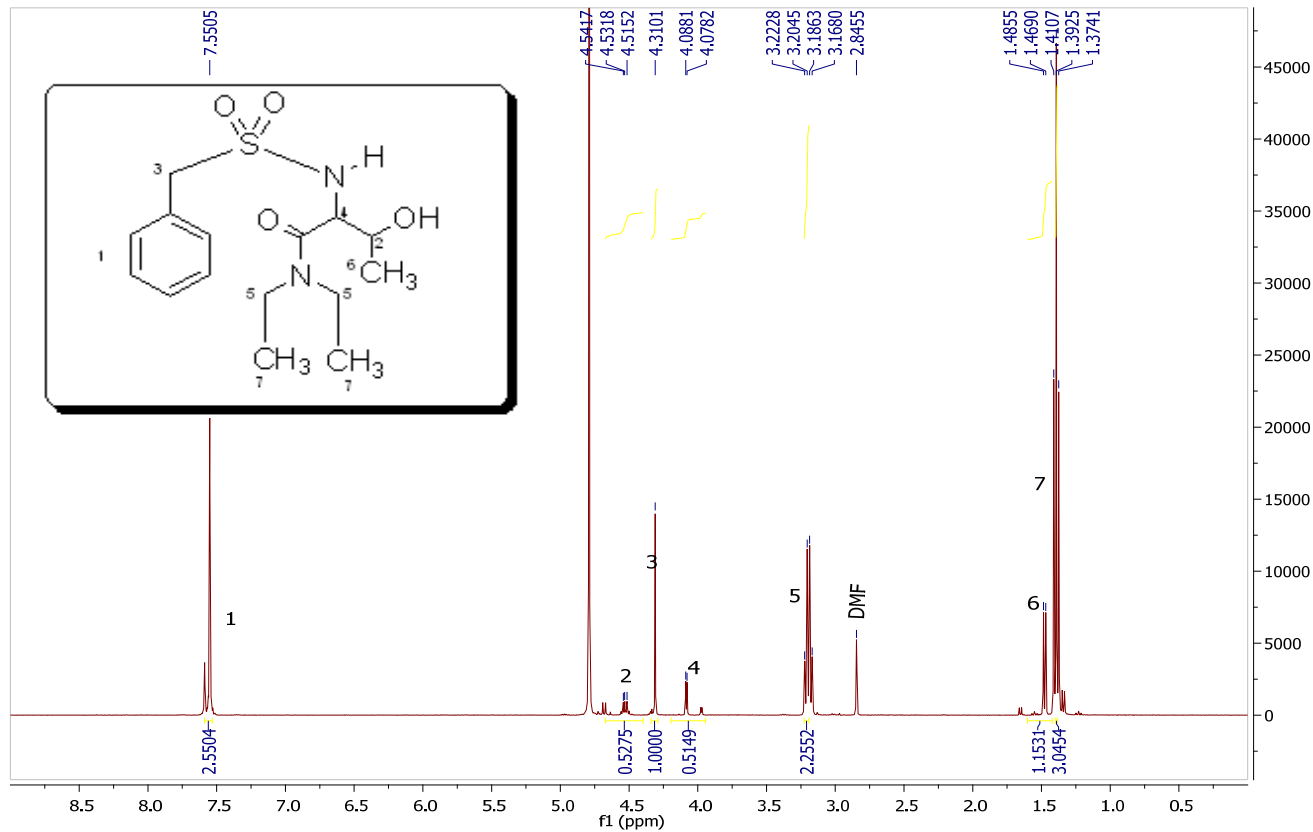


Fig. (S27). ^1H NMR spectrum (400 MHz, D_2O) of *N,N*-diethyl-3-hydroxy-2-(phenylmethylsulfonamido) butanamide (**2h**).

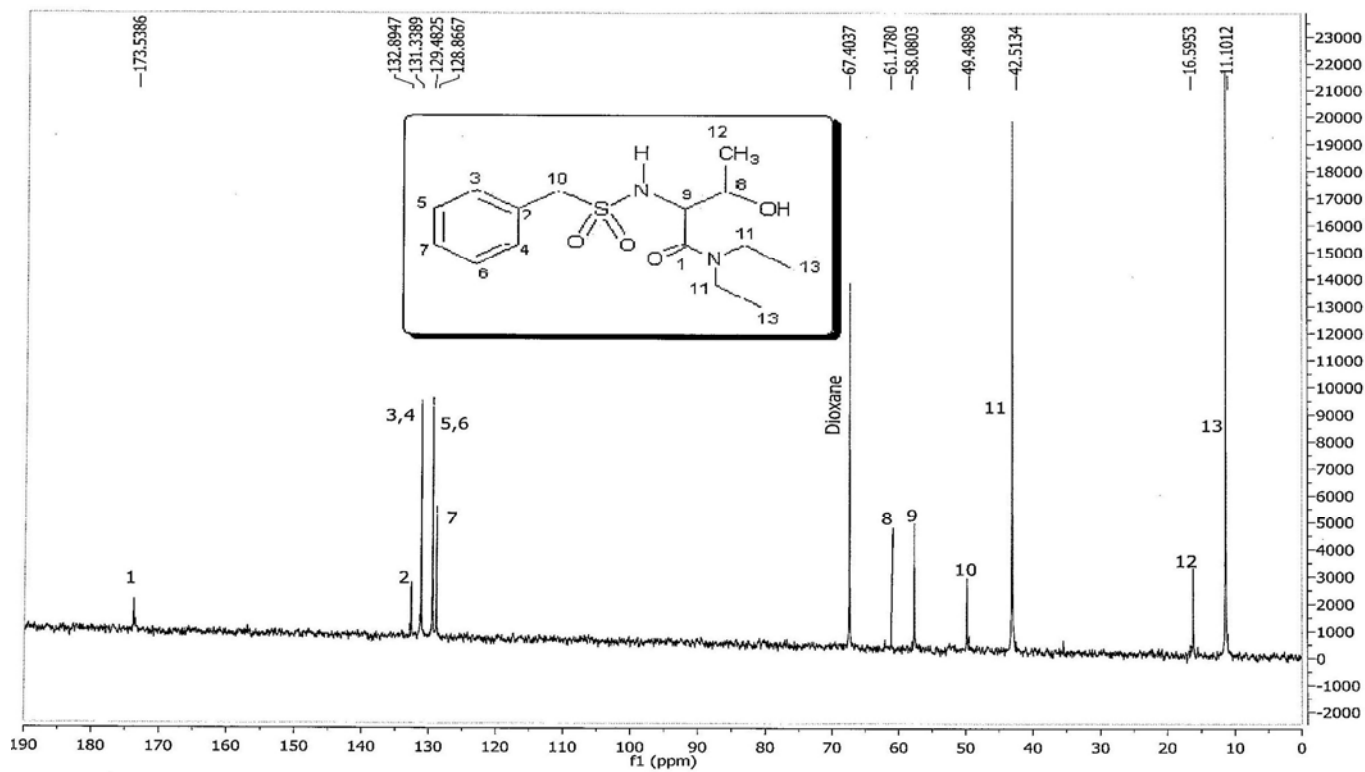


Fig. (S28). ¹³C NMR spectrum (100 MHz, Dioxane) of *N,N*-diethyl-3-hydroxy-2-(phenylmethyl sulfonamido)butanamide (**2h**).

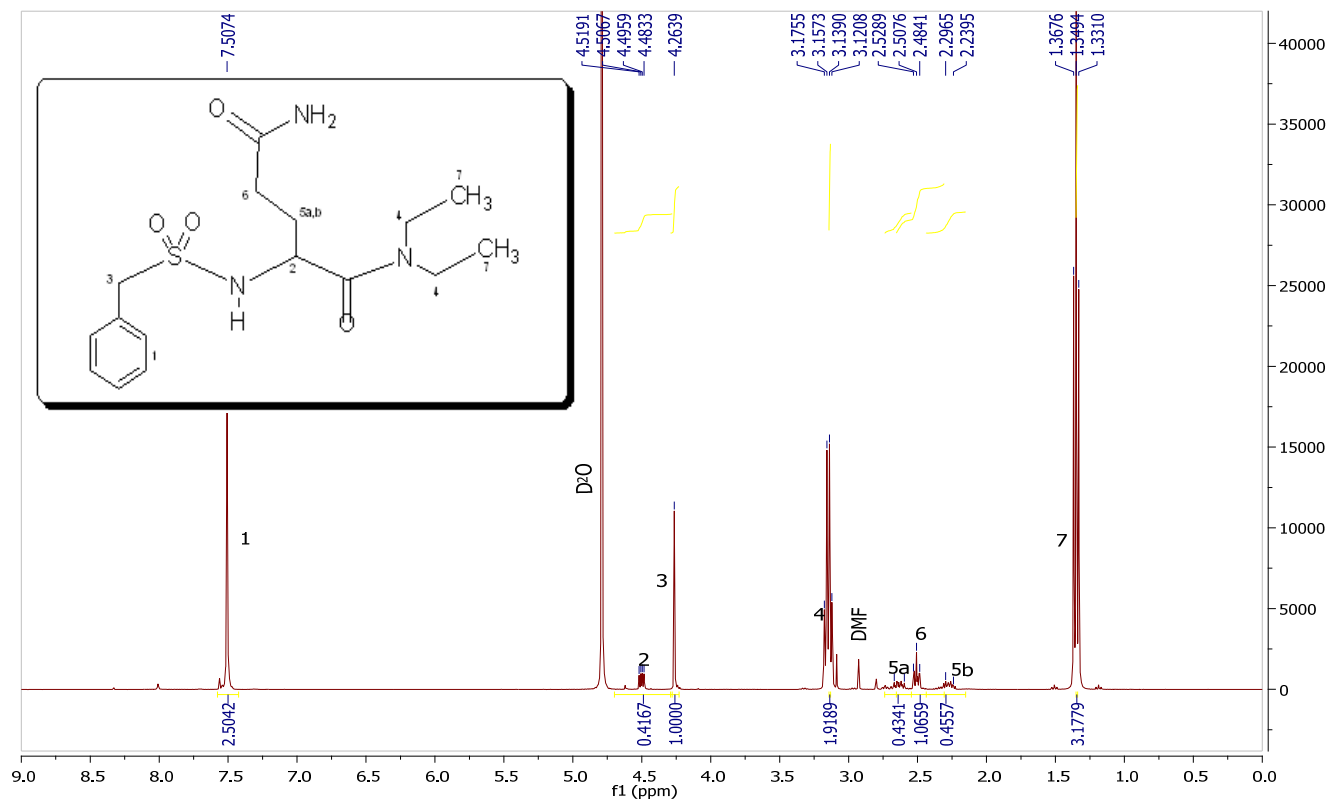


Fig. (S29). ¹H NMR spectrum (400 MHz, D₂O) of *N',N'*-diethyl-2-(phenylmethylsulfonamido) pentanediamide (**2i**).

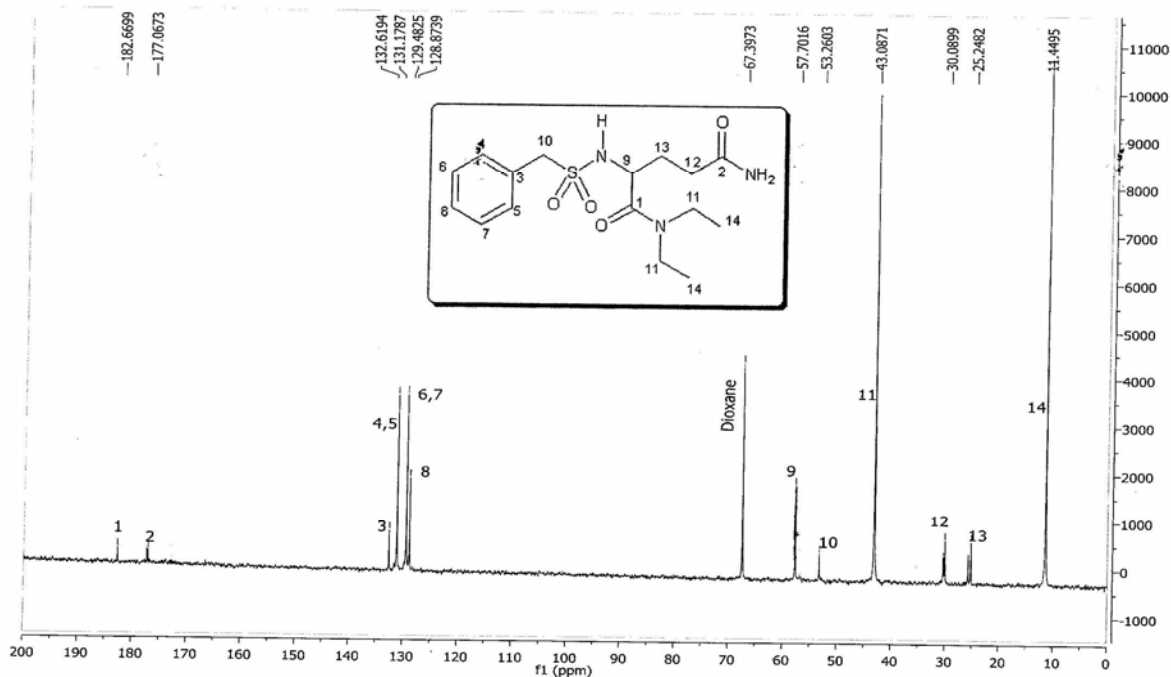


Fig. (S30). ^{13}C NMR spectrum (100 MHz, Dioxane) of N',N' -diethyl-2-(phenylmethylsulfonyl)pentanediamide (**2i**).

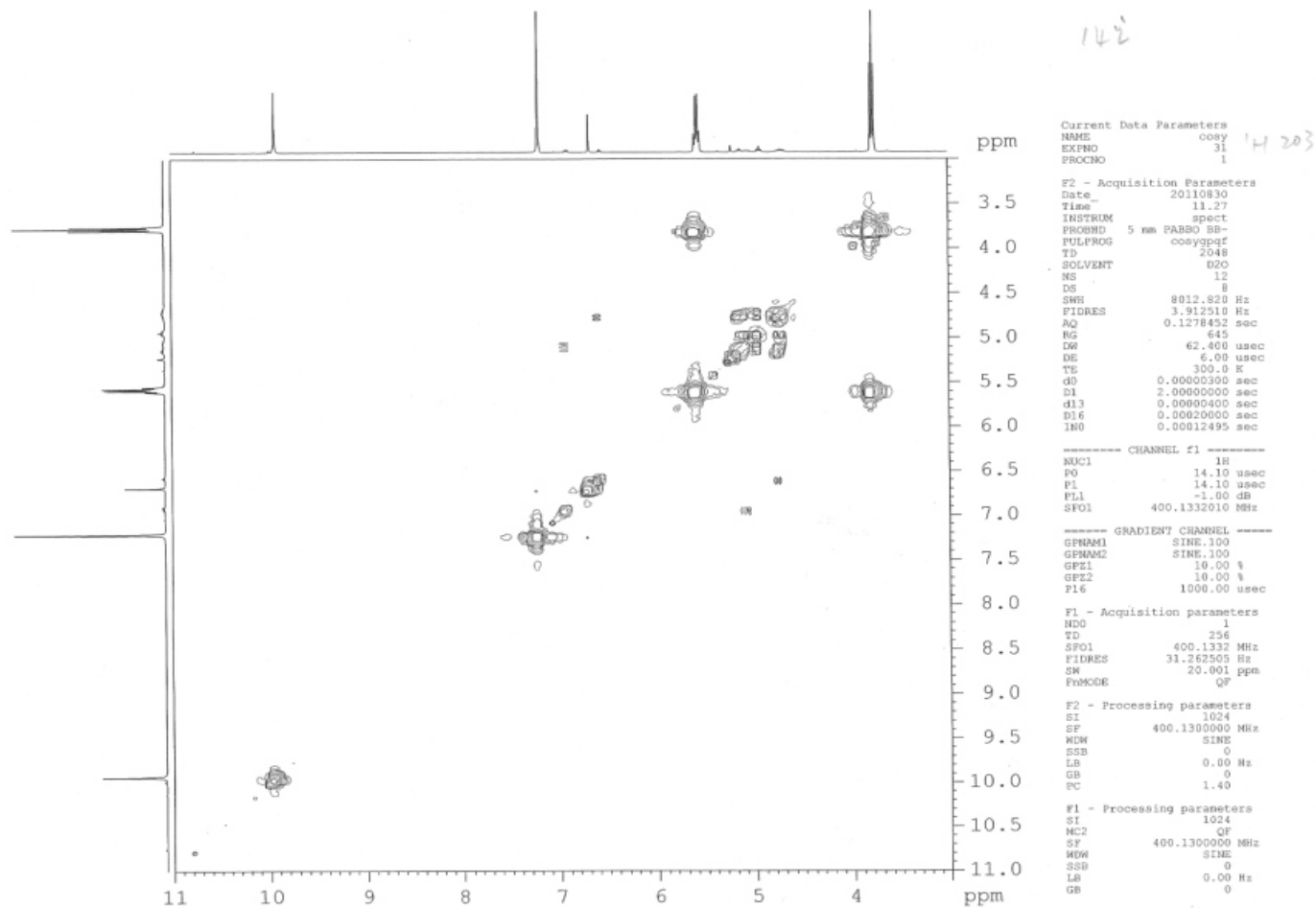


Fig. (S31). ^1H - ^1H COSY NMR spectrum (400 MHz, D_2O) of N',N' -diethyl-2-(phenylmethylsulfonyl)pentanediamide (**2i**).

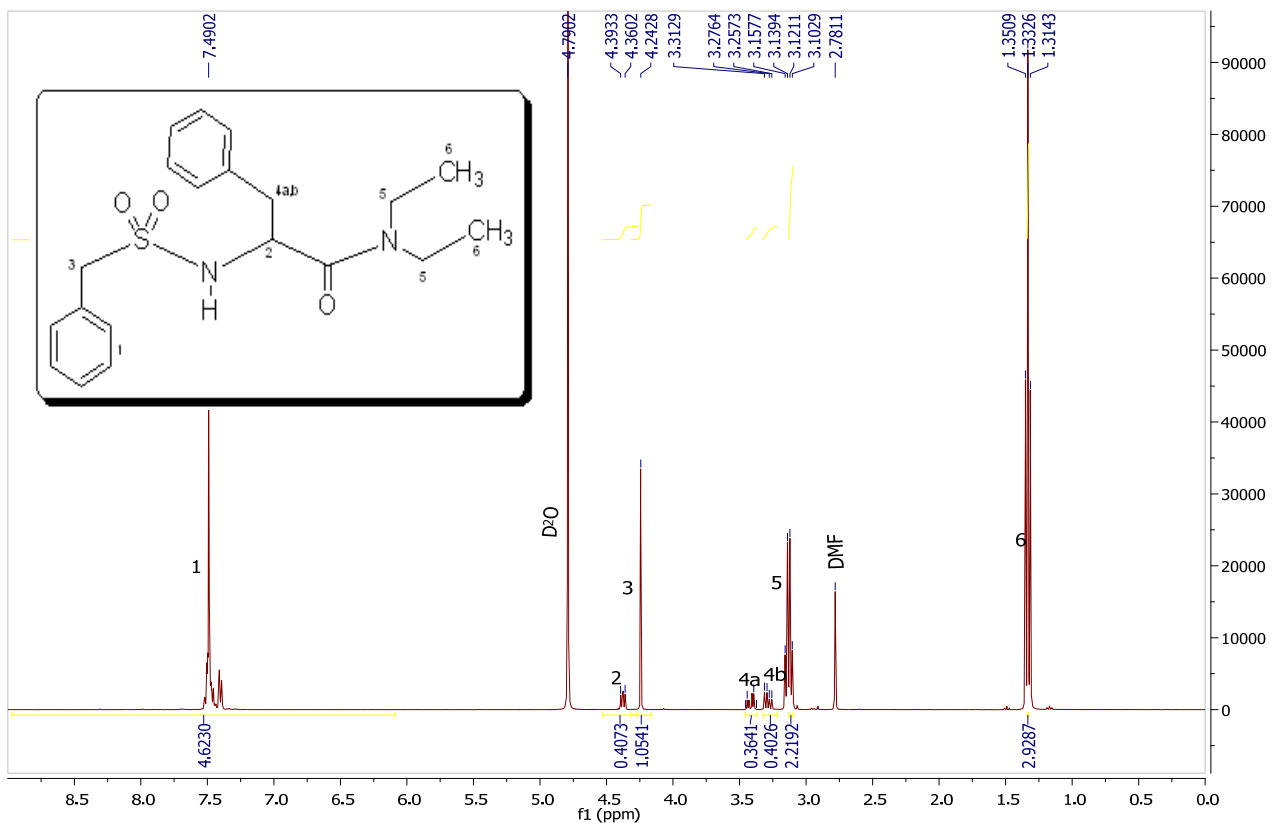


Fig. (S32). ^1H NMR spectrum (400 MHz, D_2O) of *N,N*-diethyl-3-phenyl-2-(phenylmethylsulfonamido) propanamide (**2j**).

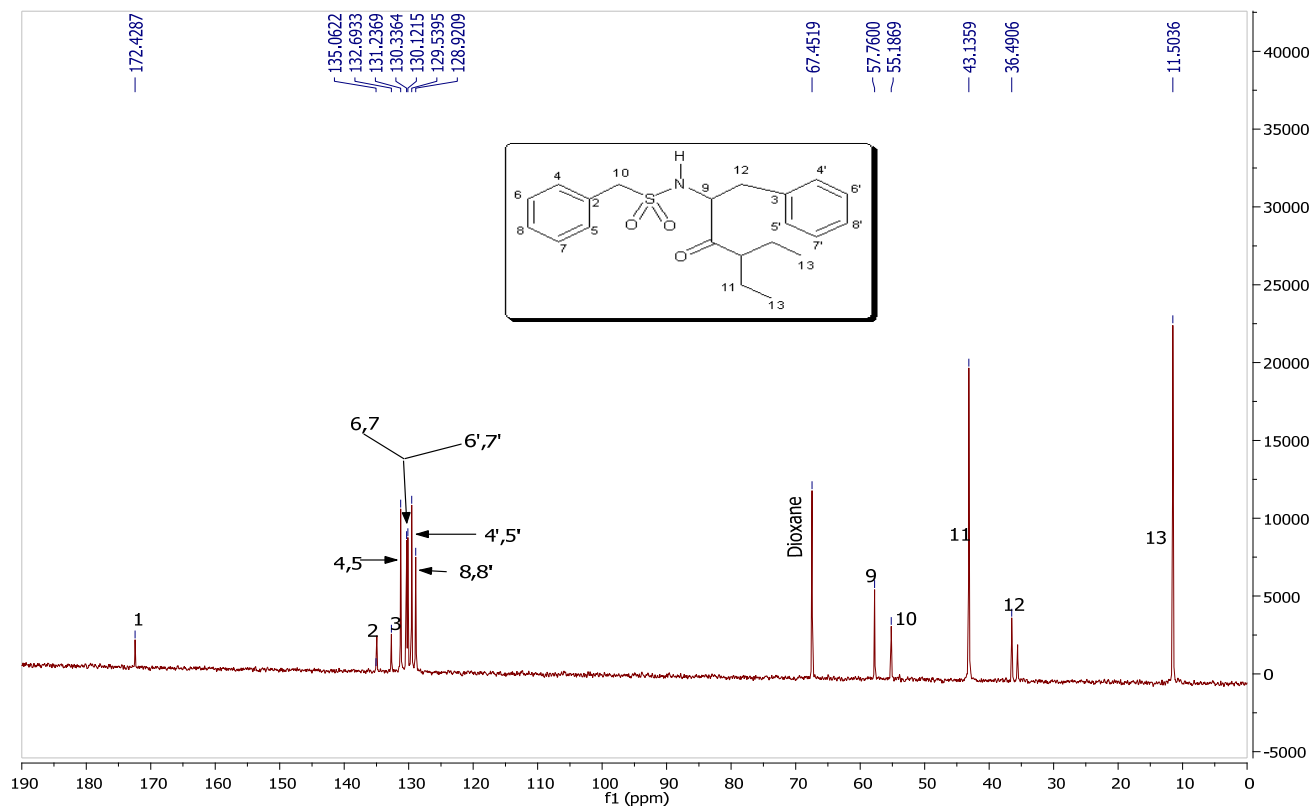


Fig. (S33). ^{13}C NMR spectrum (100 MHz, Dioxane) of *N,N*-diethyl-3-phenyl-2-(phenylmethyl sulfonamido) propanamide (**2j**).

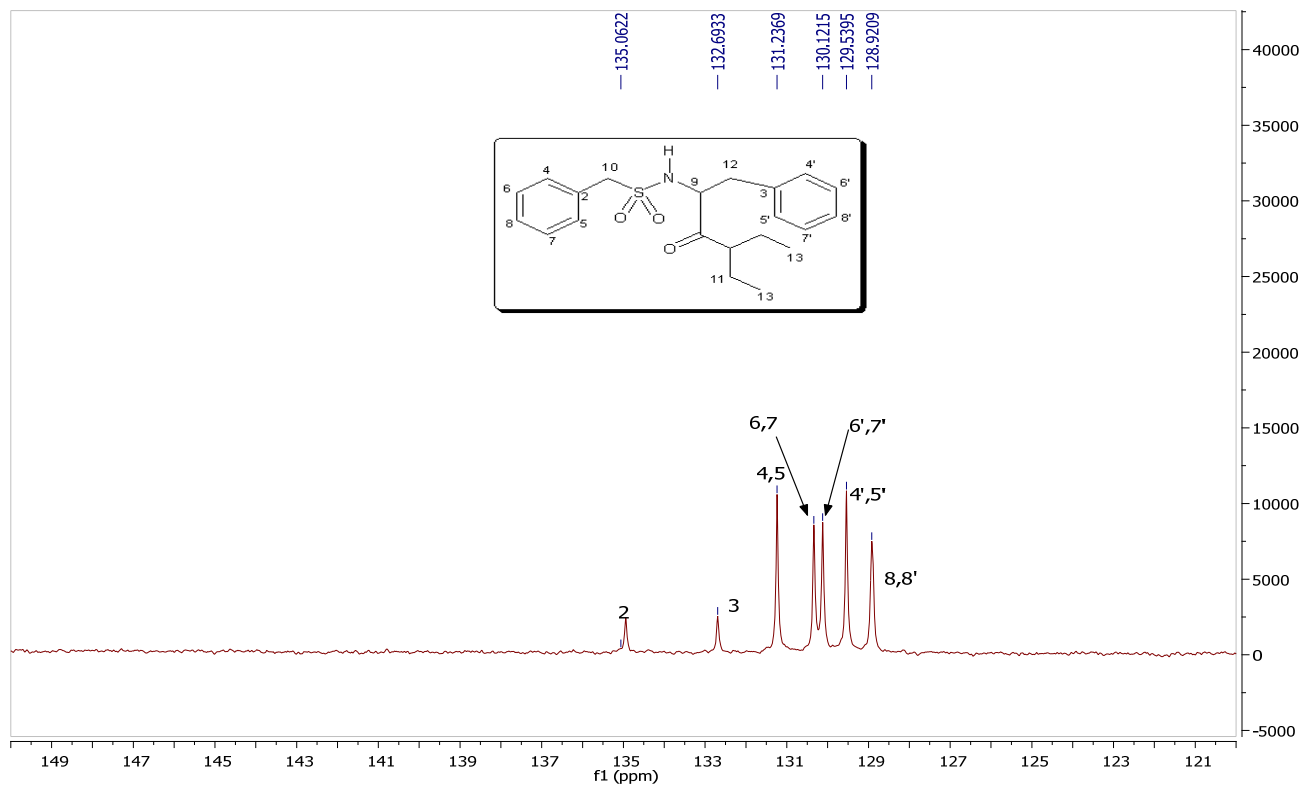


Fig. (S34). Expanded aromatic region of ^{13}C NMR spectrum (100 MHz, Dioxane) of *N,N*-diethyl-3-phenyl-2-(phenylmethylsulfonamido) propanamide (**2j**).

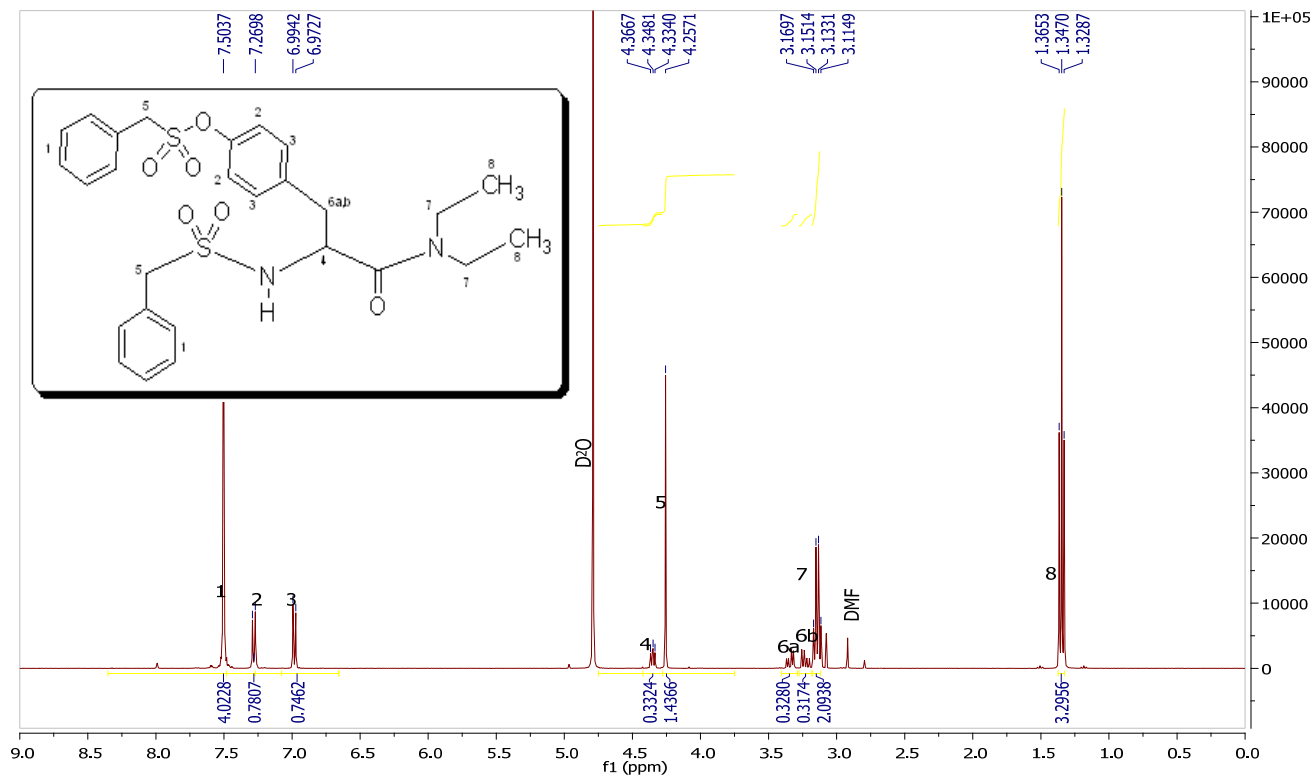


Fig. (S35). ^1H NMR spectrum (400 MHz, D_2O) of 4-(3-(diethylamino)-3-oxo-2-(phenylmethylsulfonamido) propyl)phenyl phenylmethane sulfonate (**2k**).

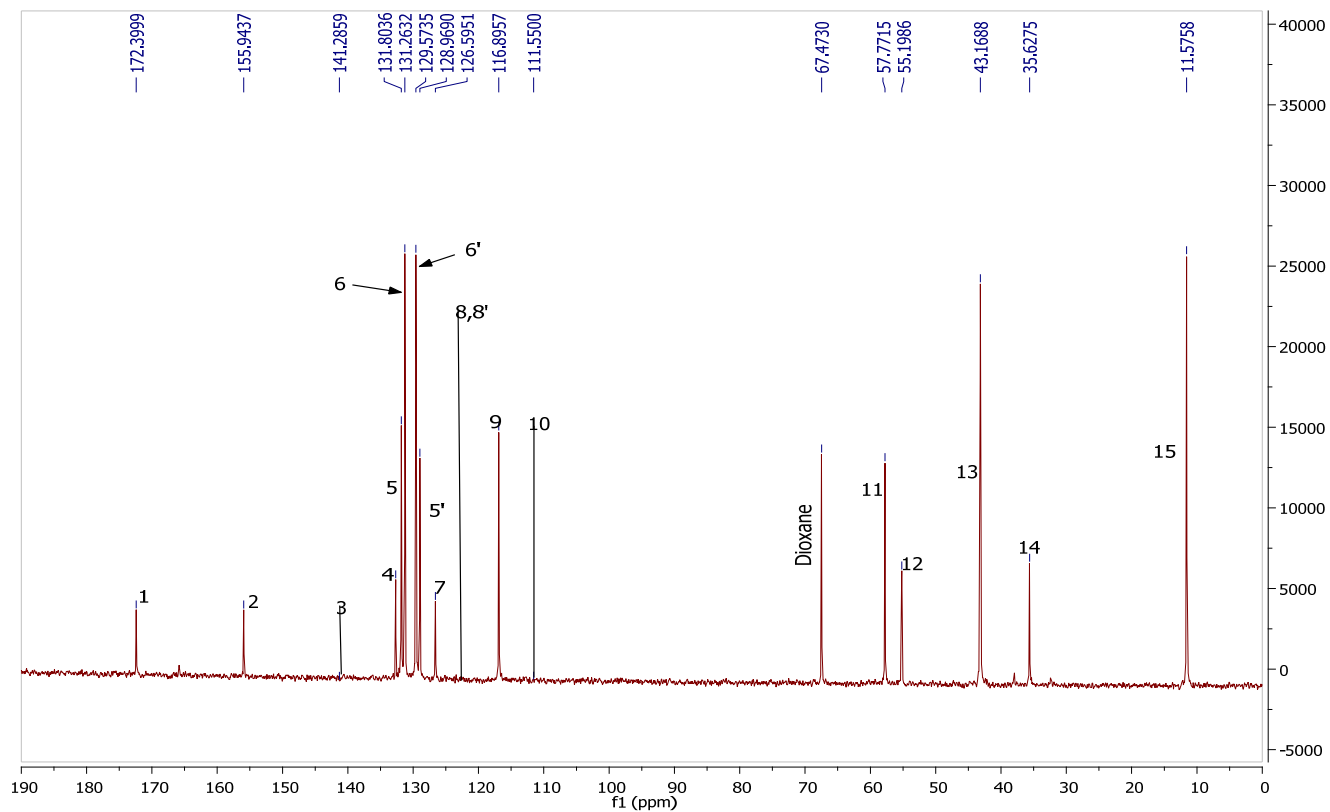


Fig. (S36). ^{13}C NMR spectrum (100 MHz, Dioxane) of 4-(3-(diethylamino)-3-oxo-2-(phenylmethyl sulfonamido) propyl)phenyl phenylmethane sulfonate (**2k**).

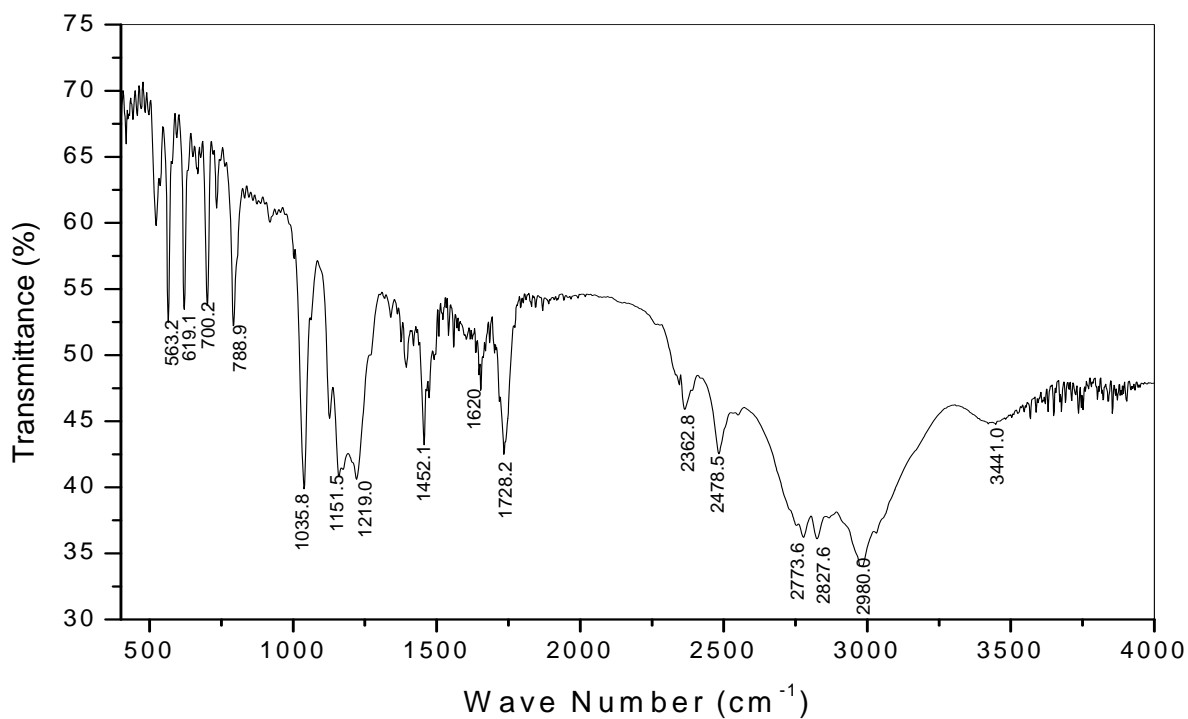


Fig. (S37). Infrared (IR) spectrum of 1-(benzylsulfonyl)pyrrolidine-2-carboxylic acid (**1a**).

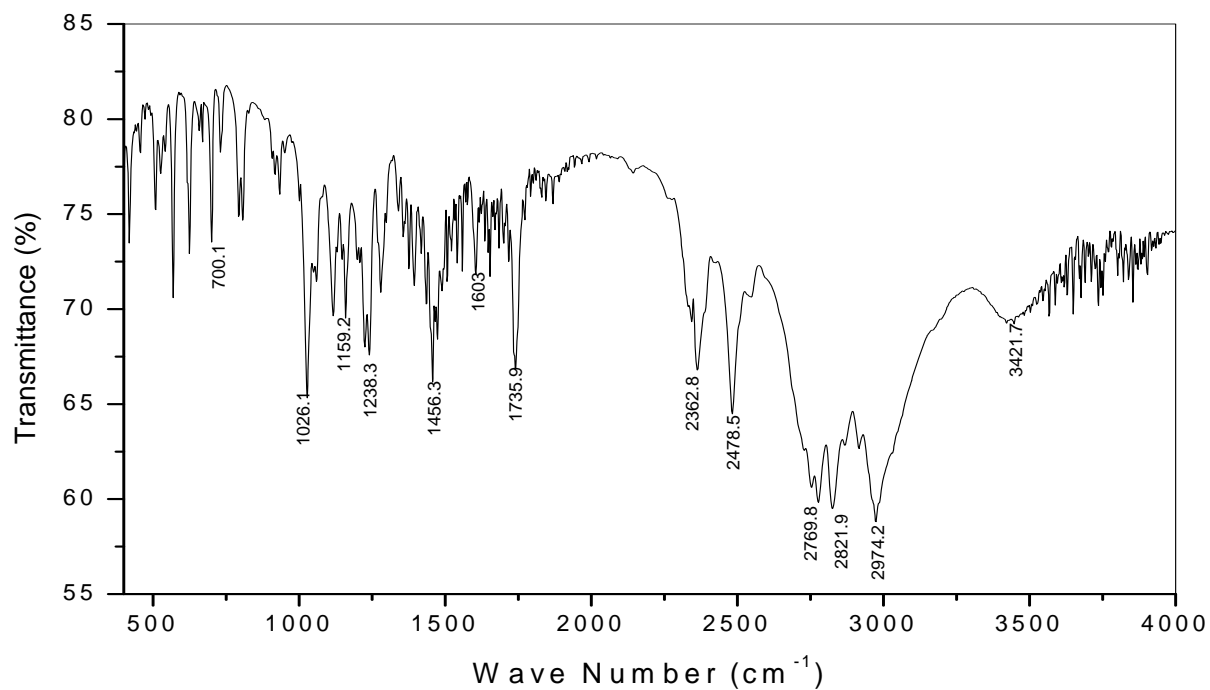


Fig. (S38). Infrared (IR) spectrum of 1-(benzylsulfonyl)piperidine-2-carboxylic acid (**1b**).

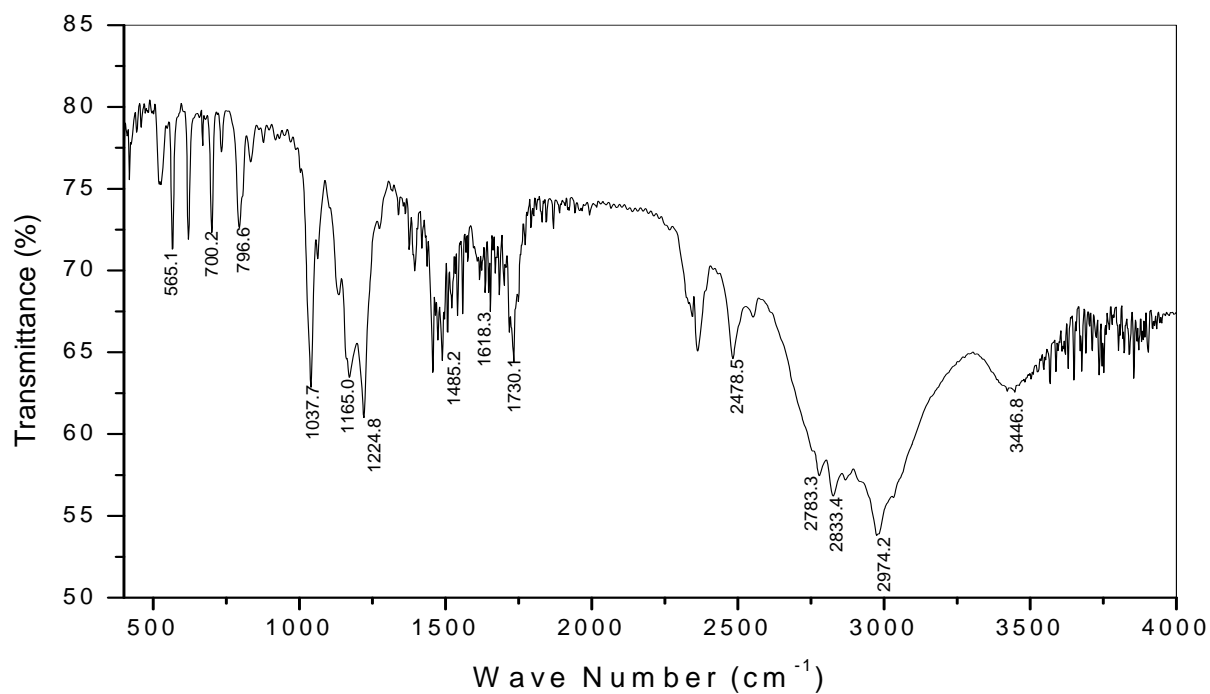


Fig. (S39). Infrared (IR) spectrum of 3-methyl-2-(phenylmethylsulfonamido)butanoic acid (**1g**).

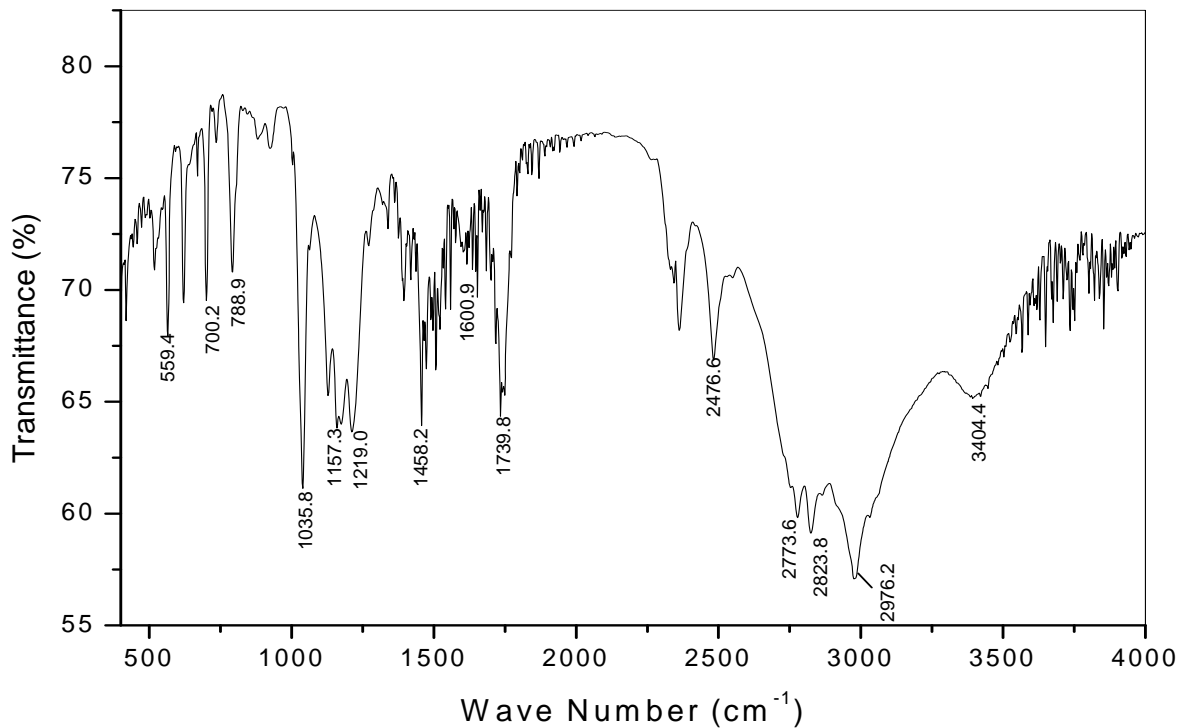


Fig. (S40). Infrared (IR) spectrum of 3-hydroxy-2-(phenylmethylsulfonamido)butanoic acid (**1h**).

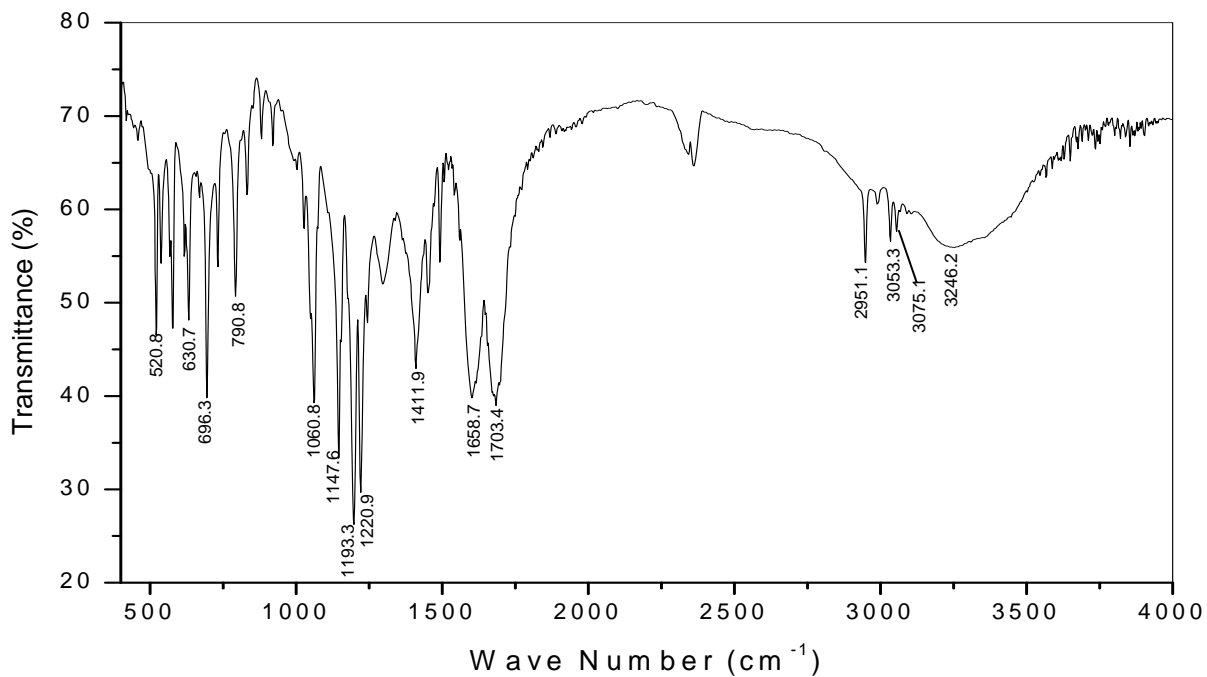


Fig. (S41). Infrared (IR) spectrum of 5-amino-5-oxo-2-(phenylmethylsulfonamido) pentanoic acid (**1i**).

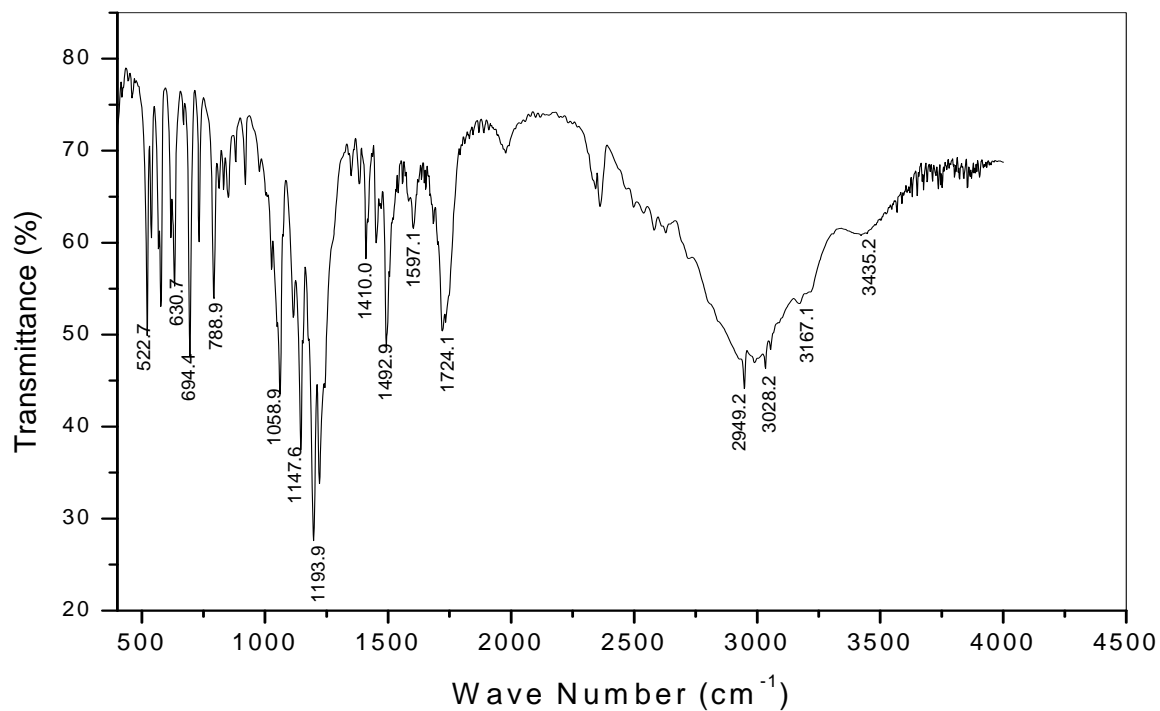


Fig. (S42). Infrared (IR) spectrum of 3-(4-(benzylsulfonyloxy)phenyl)-2-(phenylmethylsulfonamido) propanoic acid (**1k**).

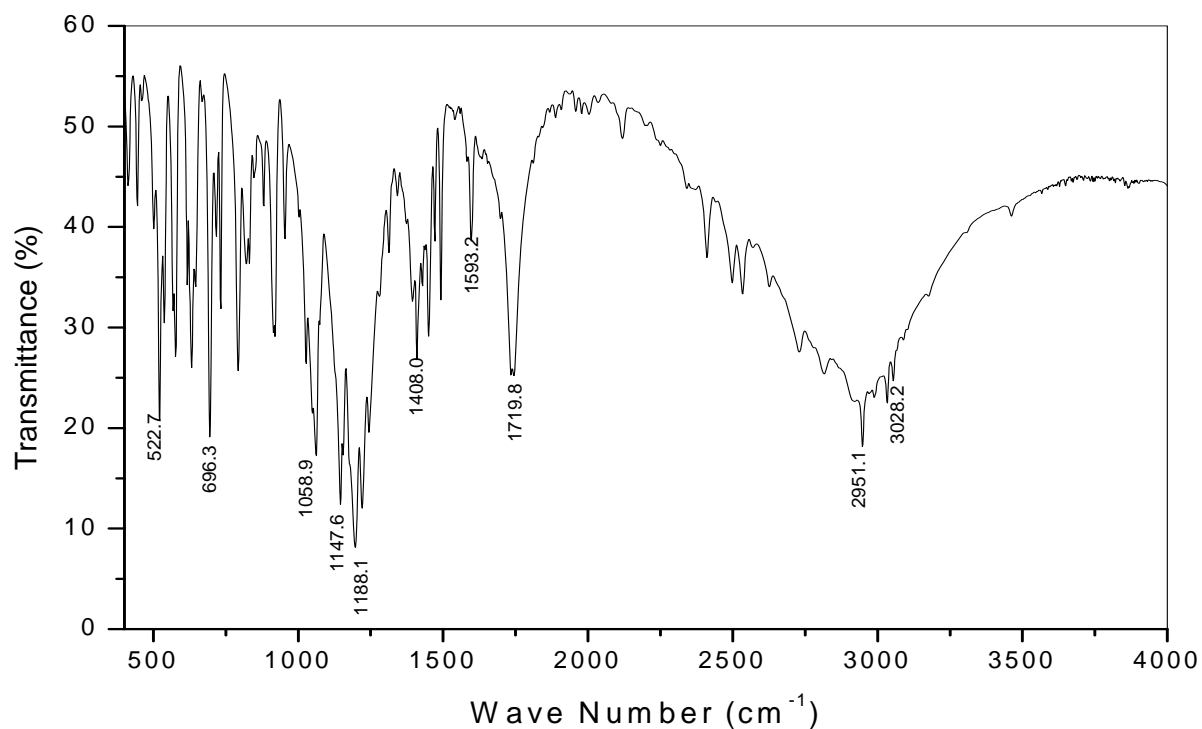


Fig. (S43). Infrared (IR) spectrum of 1-(benzylsulfonyl)-*N,N*-diethylpiperidine-2-carboxamide (**2b**).

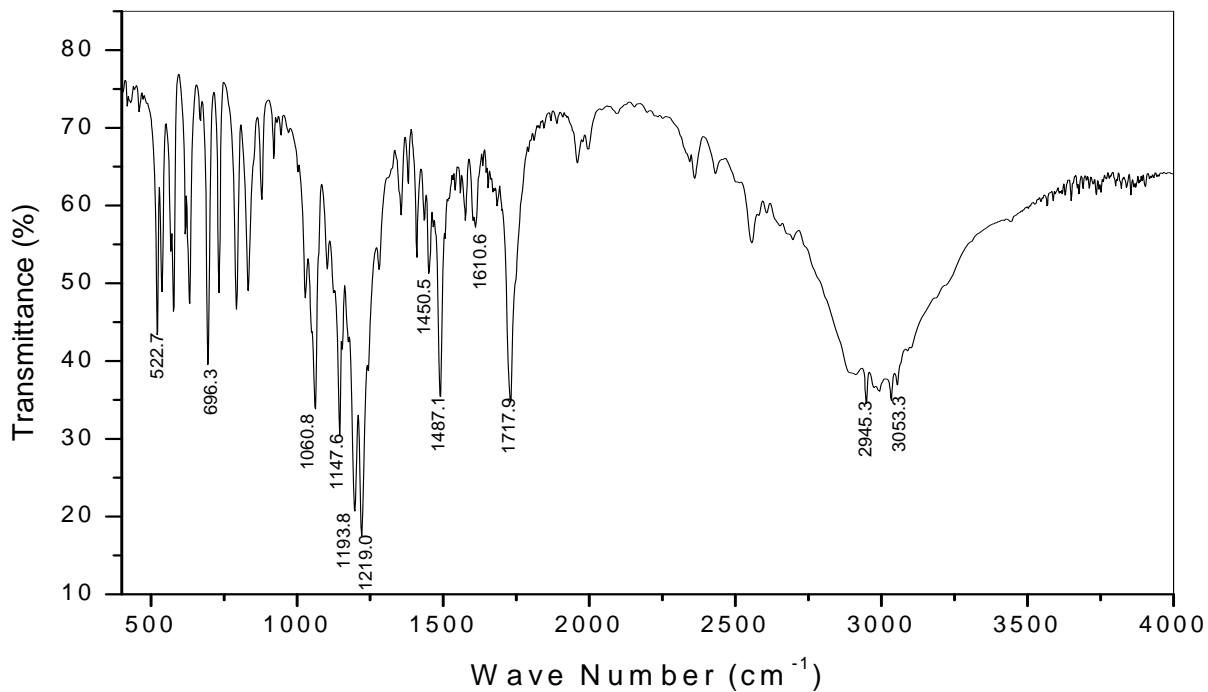


Fig. (S44). Infrared (IR) spectrum of *N,N*-diethyl-3-methyl-2-(phenylmethylsulfonamido) butanamide (**2g**).

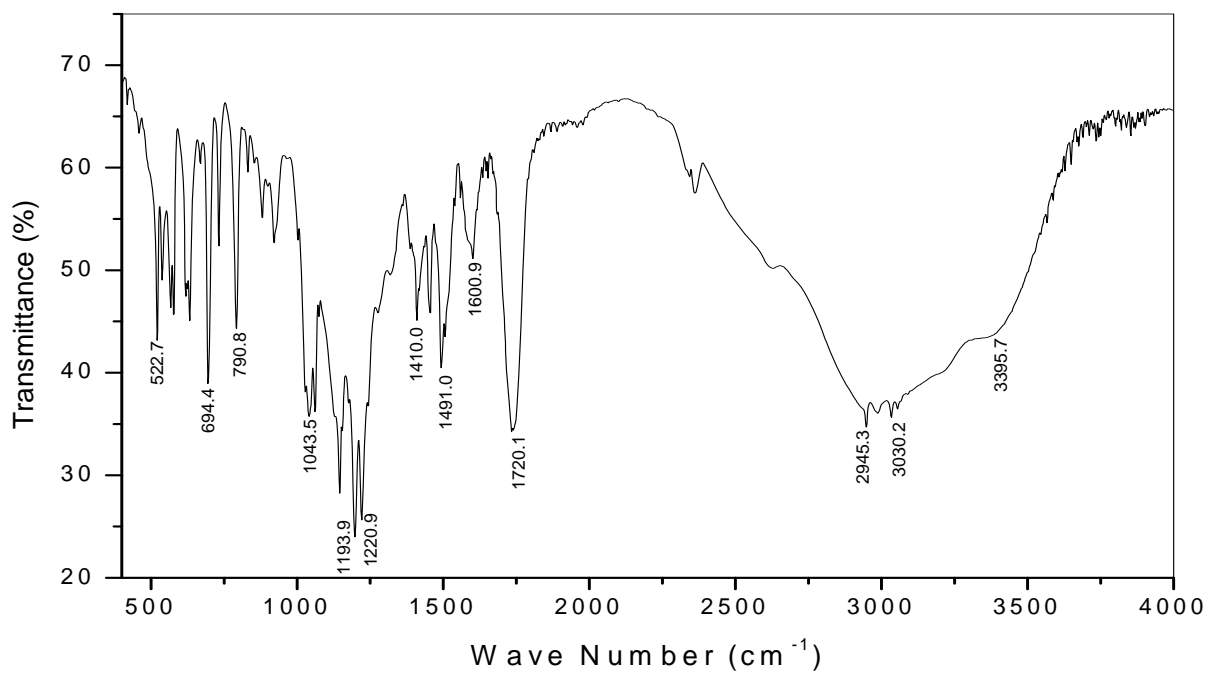


Fig. (S45). Infrared (IR) spectrum of *N,N*-diethyl-3-hydroxy-2-(phenylmethylsulfonamido) butanamide (**2h**).

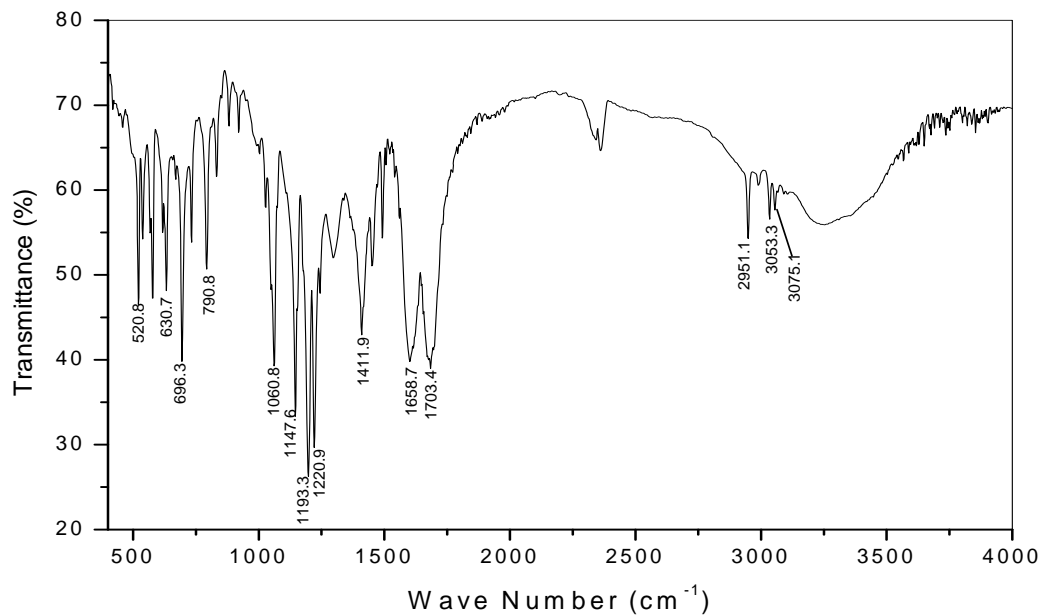


Fig. (S46). Infrared (IR) spectrum of *N',N'*-diethyl-2-(phenylmethylsulfonamido)pentanedi amide (**2i**).

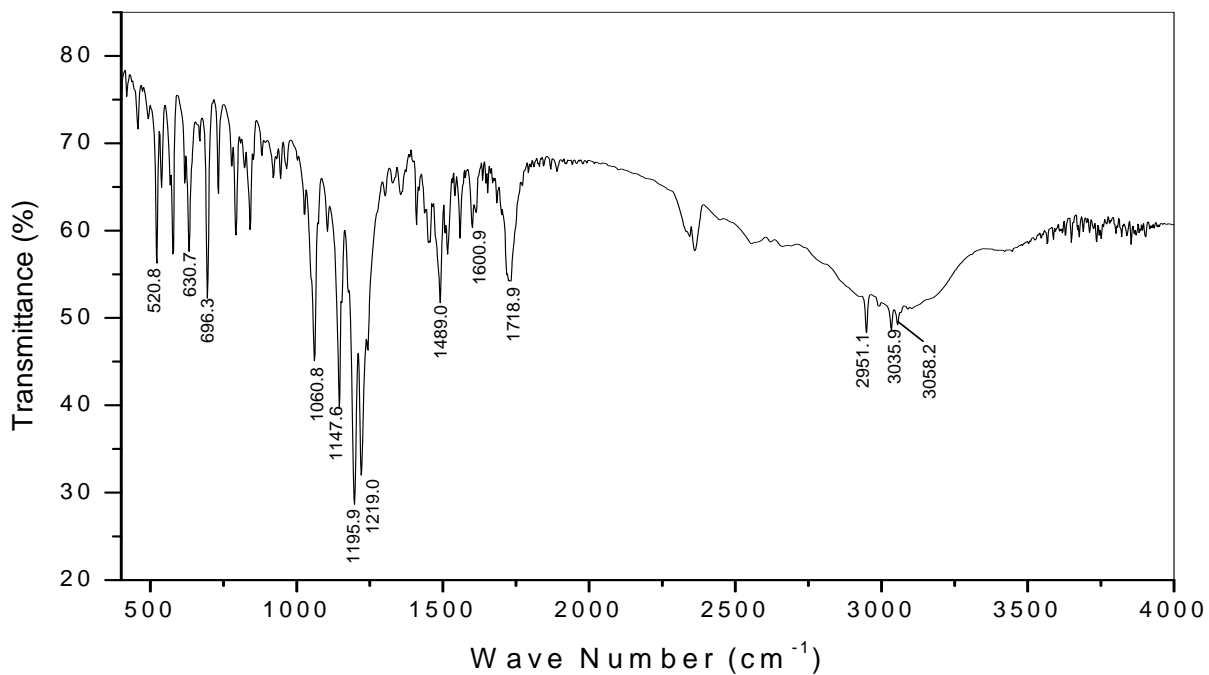


Fig. (S47). Infrared (IR) spectrum of 4-(3-(diethylamino)-3-oxo-2-(phenylmethylsulfonamido) propyl) phenyl phenylmethane sulfonate (**2k**).

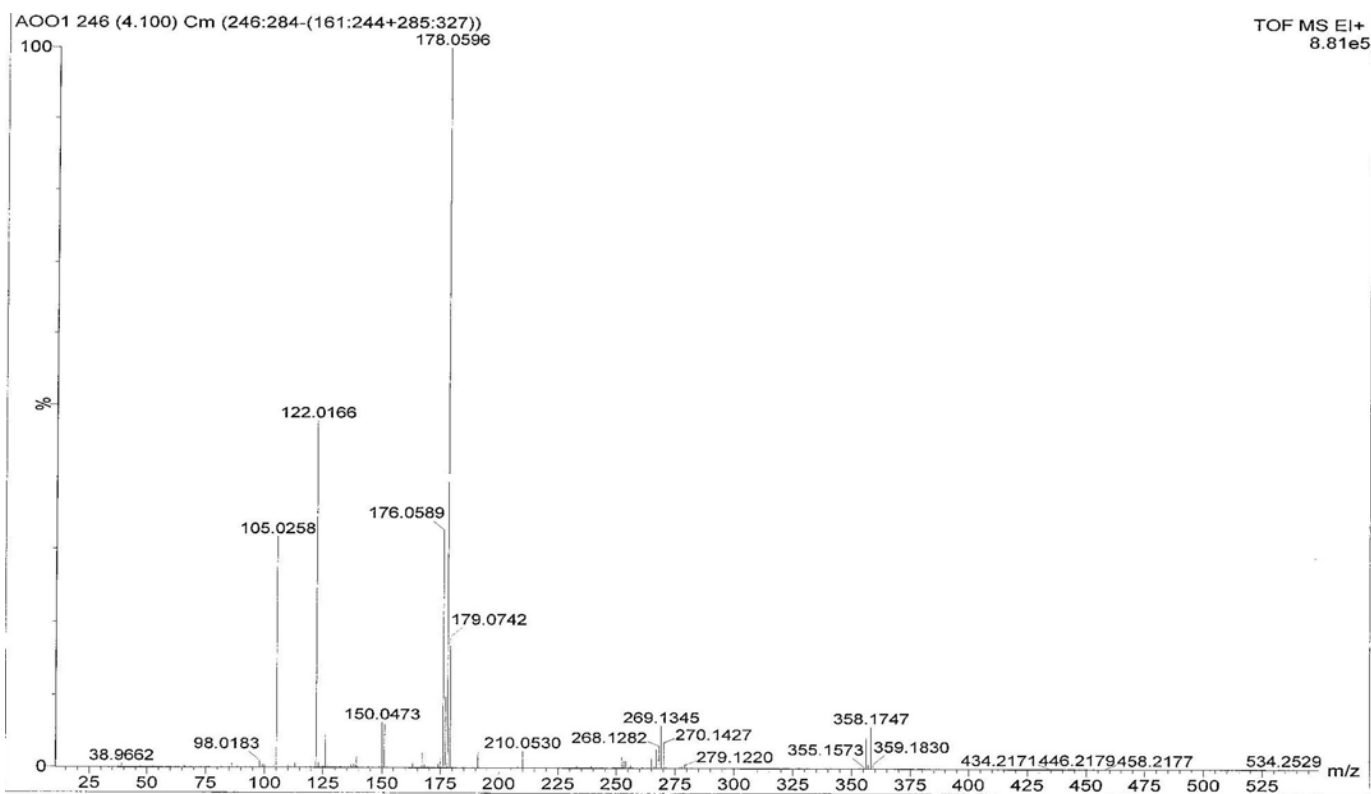


Fig. (S48). Mass spectrum of 1-(benzylsulfonyl)pyrrolidine-2-carboxylic acid (**1a**).

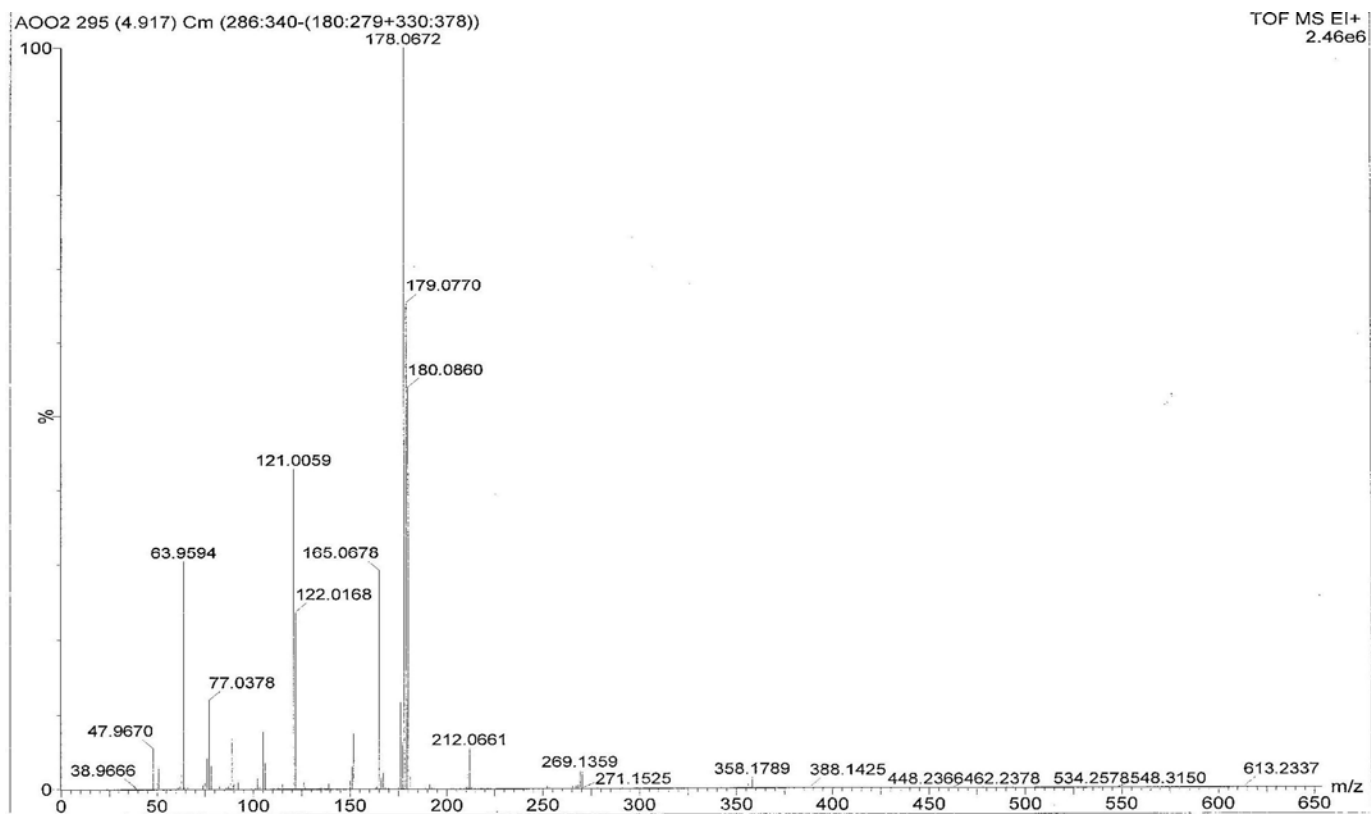


Fig. (S49). Mass spectrum of 1-(benzylsulfonyl)piperidine-2-carboxylic acid (**1b**).

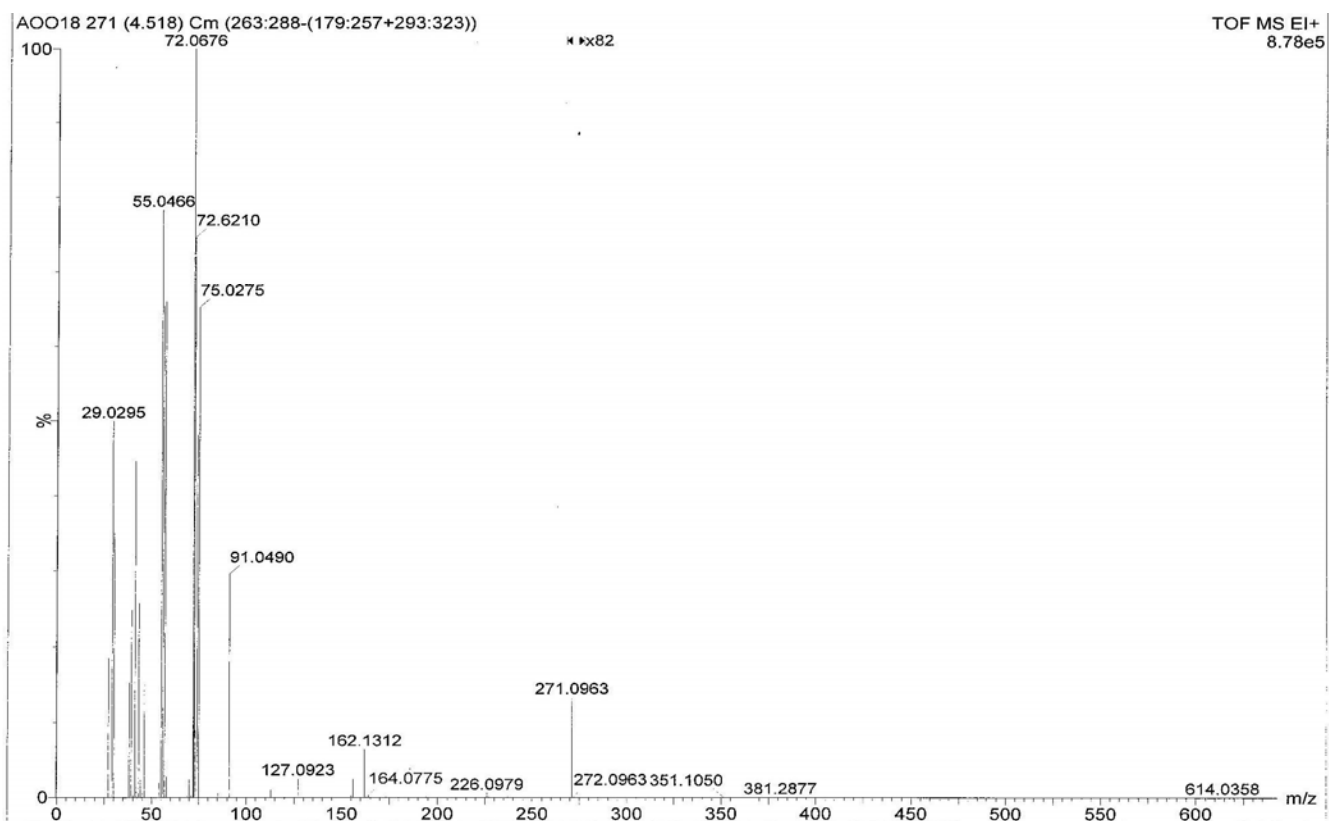


Fig. (S50). Mass spectrum of 3-methyl-2-(phenylmethylsulfonamido)butanoic acid (**1g**).

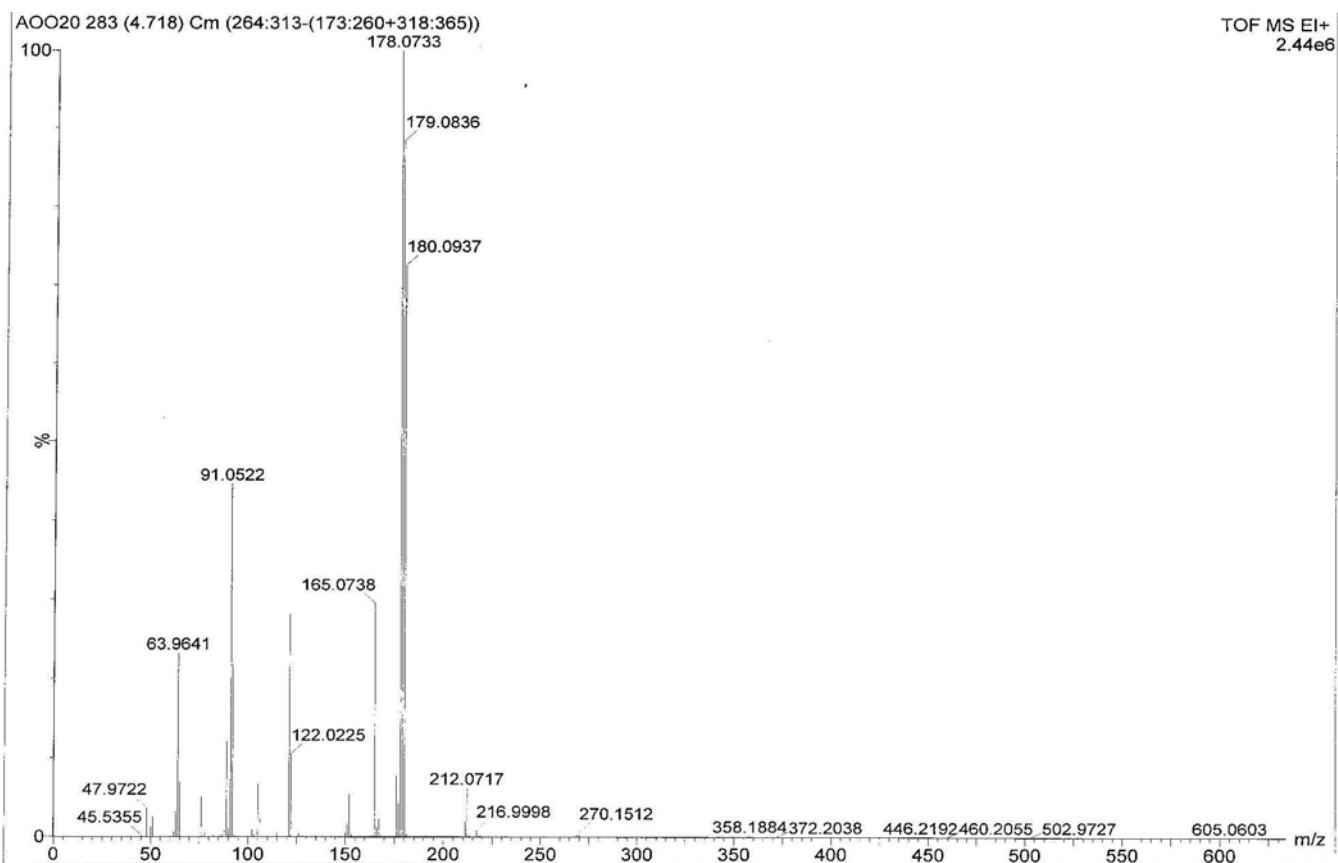


Fig. (S51). Mass spectrum of 3-(4-(benzylsulfonyloxy)phenyl)-2-(phenylmethylsulfonamido)propanoic acid (**1k**).