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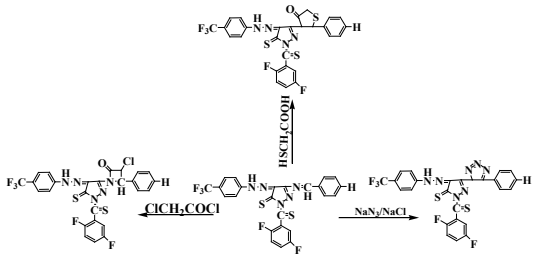
Synthesis and biological activity of N-substituted 3-chloro-2-azitidinones/thiazolidines/tetrazoles

M Swarna Kumari, L K Ravindhranadh and K Sudhakar Babu
S. K. University, India

3-amino-1-(2,5-diflouro phenyl carbano thioyl) 4-(2-(4-(triflouro methyl)phenyl)hydrazono)-1H-pyrazoles-5(4H)-thione(1) on condensation with 4-substituted benzaldehyde(2) affored 3-(benzylidineamine)-1-(2,5-difluoro phenyl carbonothioyl)-4(2-(4-(trifluoro methyl)phenyl)hydrazono)-1H-pyrazole-5(4H)-thione(3). which on condensation with chloro acetyl chloride/mercapto acetic acid/PCl5, NaN3 and NaCl mixture yielded 3(1-(2,5-diflouro phenyl carbano thioyl)-5-thioxo- 4-(2-(4-(triflouro methyl)phenyl) hydrazono)-4,5 di hydro-1H-pyrazol-3-yl)-2-(4substituted phenyl azetidine-2-one /3(1-(2,5-diflouro phenyl carbano thioyl)-5-thioxo-4-(2-(4-(triflouro methyl)phenyl)hydrazono)-4,5 di hydro-1H-pyrazol-3-yl)-2-(4substituted phenyl thiazolidine-4-one /1-(2,5-diflouro phenyl carbano thioyl)-3-(5-phenyl-1H-tetrazol-1-yl) 4-(2-(4-(triflouro methyl)phenyl)hydrazono)-4,5 di hydro-1H-pyrazol-5(4H)-thione respectively. The structures of newly synthesized compounds were established by IR, 1H-NMR, 13C-NMR Mass Spectral data and Analytical data. The newly synthesized compounds were screened for their anti bacterial activity against four micro organisms; *Staphylococcus aureus* (gram positive); *Bacillus subtilis* (gram positive); *Pseudomonas aerugnosa* (gram negative) and *Escherichia coli* (gram negative). They were found to exhibit good to moderate anti bacterial activity. The antifungal activities of these compounds were also tested against three different fungal species and none of them were active against the species tested.



comp	1	2	3	4	5	6
R	H	CF_3	F	Cl	Br	NO_2

swarnaoliver@gmail.com

Secondary metabolite estimation by callusing of *Decalepis hamiltonii*

Devaki Mady S, Akanksha Aradhya T A, Poorna P, Surabhi V Rao and Nagashree N Rao
R V College of Engineering, India

Decalepis hamiltonii, commonly known as 'Makali beru' in Kannada is a medicinal shrub known for its antioxidant property. It belongs to the family of Asclepiadaceae. The roots of this plant contain metabolites like aldehydes, alcohols, ketones, sterols and triterpenes, of which 2-hydroxy-4-methoxybenaldehyde is the principle component. This compound is an isomer of vanillin, due to which it offers aroma to the roots and hence justifies its use in pickles. On the medicinal aspect this component has antibacterial, antifungal, anti-inflammatory, antipyretic, chemoprotective, hepatoprotective and most importantly, antioxidant properties. When consumed, it cools the system, gives good appetite and also acts as a blood purifier. The methodology opted is, first production of callus followed by estimation of secondary metabolites from the obtained callus. Murashige and Skoogs media containing the growth regulators- NAA, BAP and 2,4-D was used for callus induction. The nodes and leaves were used as explants. The pretreatment was done by washing the explants with tween20 and sodium hypochlorite for sterilization. The concentration of NAA, BAP and 2,4-D was optimized after extensive trials of concentrations. With all the above aspects accompanied with careful inoculation and maintenance of constant distal periods, regenerative callus was obtained after two months of inoculation. We carry forward this project to metabolite profiling in which we compare the amount of principle metabolite released in regenerative callus and the parent plant. If the findings show significant increase in the amount of metabolite through callusing when compared to that in the natural plant, we can conclude that *in-vitro* propagation is the key solution to obtain high concentration of this metabolite. However, we instigate to come up with more information on this metabolite by exploring its uses in medicinal field and may even look up to commercialize this product by using it as a substituent to vanillin.

devakimady@gmail.com