HETEROCYCLIZATIONS OF PROGESTERONE: SYNTHESIS AND PNEUMOCOCCAL VACCINATION EVALUATION OF PROGESTERONE DERIVATIVES

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Progesterone (1) was used as a template to develop new anticancer compounds. Ring D modification of 1 through its reaction with active methylene derivatives gave the condensated products derivative 3a,b. The latter compounds underwent heterocyclization reactions through the reaction with either hydrazine hydrate or phenylhdrazine to give the pyrazole derivatives 6a-d, respectively. The reaction of 1 with bromine gave the ▪-bromo derivative 7. The latter reacted with potassium cyanide to give the cyanoacetyl derivative 8. Compound 8 underwent a series of reactions to give benzylidene, aryl hydrazine, pyrazole and pyran derivatives. The newly synthesized products were evaluated as pneumococcal vaccination and the compounds gave promising results.