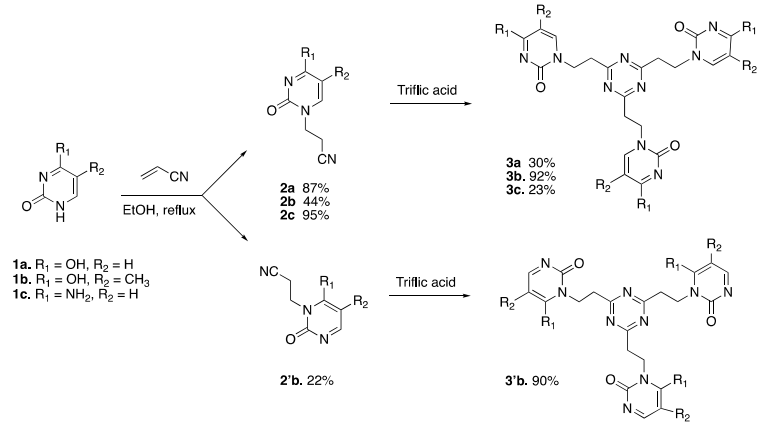
# CYCLOTRIMERIZATION OF NUCLEOBASE-LINKED NITRILES FOR THE PRODUCTION OF NOVEL *S*-TRIAZINES

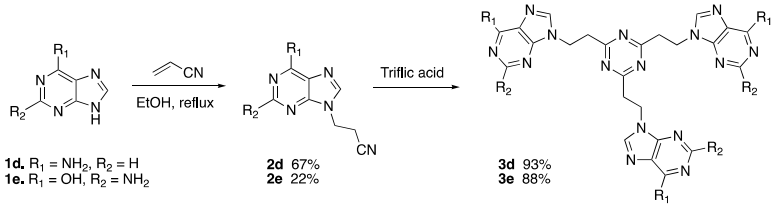
Ali Youssef[a], Jomana Elaridi[b], Kamal Bouhadir[a,*]

[a]Department of Chemistry, American University of Beirut, Beirut, Lebanon
[b]Department of Natural Sciences, Lebanese American University, Beirut, Lebanon

1,3,5-triazine (*s*-triazine) derivatives represent a group of molecules with a diverse array of biological and chemical characteristics with applications in various fields including biology, supramolecular chemistry, polymer synthesis, liquid crystals and light emitting diodes. Here, we present the preparation of a series of novel *s*-triazine derivatives symmetrically substituted with pyrimidine and purine nucleobases *via* the cyclotrimerization of nitrile-linked nucleobase precursors. The synthesis involved reaction of the nucleobases - thymine, uracil, cytosine, adenine and guanine - with acrylonitrile to produce the cyanoethyl-linked nucleobases in moderate-to-excellent yields (44-95%) (Schemes 1 & 2). Subsequent cyclotrimerization was effected by reaction with triflic acid to afford the novel water soluble *s*-triazine derivatives in yields ranging from 23-90% (Schemes 1 and 2). All products were isolated, purified and characterized using mpt, $^{1}$H-NMR, $^{13}$C-NMR, DEPT, COSY, NOESY and FTIR spectroscopic analysis.




**Scheme 1**




**Scheme 2**