

Abstract

Vanillin (VAN) and its oxidized form vanillic acid (VA) have successfully formed a series of co-crystals and salts. VAN formed a co-crystal with isonicotinamide (INM) and a co-crystal hydrate with theobromine (THB). Binary co-crystals of VA with isonicotinamide (INM), hexamethylenetetramine (HEXA), phenazine (PHZ) and pyrazine-*N*-oxide (PZO) were obtained. Interestingly, a ternary co-crystal resulted from a 1 : 1 : 1 ratio of VA, caffeine (CAF) and nicotinamide (NAM). Salt hydrates were also formed between piperazine (PPZ) and 1,4-diazabicyclo[2.2.2]octane (DABCO) with VA. All co-crystals and salts were characterized by X-ray diffraction techniques, thermal analysis and infrared spectroscopy.