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Designing and Developing Suppository Formulations for Anti-Epileptic Drug Delivery

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Abstract: *The purpose of present research work is to expand various suppository bases in order to control disadvantage of traditional base and to analyses the release of Phenytoin from this bases. Cocoa butter, White bees wax, Hydrogenated vegetable oil used as base and prepared by fusion method. Improved base is estimated for physicochemical parameters like appearance, hardness, weight variation, hydroxyl vale and this bases used in the preparation of Phenytoin suppositories. Suppositories of Phenytoin were estimated for physical parameter drug content, In vitro drug release reports. Selected suppositories bases were specify by X-ray diffraction, Infra Red spectroscopy studies. Physicochemical parameters of suppositories base show within limit. Hydroxyl value of bases observed in limits 89.76-134.64. From the result it is analyzed white bees wax , cocoa butter and Hydrogenated vegetable oil show fast release. Physicochemical parameters of Phenytoin suppositories show within limit. Product contains white bees wax , Hydrogenated vegetable oil shows 99.44% drug release at 120 min. within 71.83% dissolution efficiency. Infra Red spectroscopy shows affinity of drug with adjuvant and X-ray diffraction also differential scanning calorimetry show reduction in degree of crystallinity of Phenytoin. Also it can be analyzed white bees wax, hydrogenated vegetable oil combination useful for poorly water soluble drug like Phenytoin. Using fusion method this formulation was designed with combination of bases like Hydrogenated vegetable oil, cocoa butter, white bees wax . Thus finally it can be concluded that white bees wax, Hydrogenated vegetable oil combination is more suitable for poorly water soluble drug like phenytoin.*

Keywords: Phenytoin, Suppository base, Rectal delivery, Lipid-Based –Vehicles

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