Type of presentation: Poster

ID-8-P-2436 Use of optic microscopy in the prediction of the rheological properties of pharmaceutical´s granulates.

Amado J. R.[1], Escalona-Arranz J. C.[1], Da Silva C. F.[2], Prada A. L.[1]

[1]Departamento de Farmacia. Universidad de Oriente, Santiago de Cuba, Cuba., [2]Laboratório de Biologia Celular, Fundação Oswaldo Cruz, Rio de Janeiro, RJ, Brazil.

Email of the presenting author: franca@ioc.fiocruz.br

The rheological properties of pharmaceutical´s granulates have an elevated importance in the industry, because they condition granulates' flow through the hopper. The external form of those particles is one of the most important characteristic that conditioned their rheological properties. That is why the objective of the present work is to develop mathematical models that correlated the rheological properties of pharmaceutical´s granulates with some aspects related with the external form of those particles, using optic microscopy. By the 3-D applications of the EdN-2 software were calculated the classic variables "shape form" and "factor volume" of ten different pharmaceutical´s granulates. They were prepared mixing diverse proportions of lactose and microcrystalline cellulose. Under laboratory conditions, it was determined experimentally the "flow factor" and the "angle of repose", being correlated with the previous particle form variables. The same proportion of five granulates with better rheological properties were considered to prepared two groups of other five formulations that includes a new ingredient: a natural extract from leaves of Tamarindus indica L. or fruits of Cassia grandis L. The mathematical models obtained can predict the rheological behavior of the ten pharmaceutical granulates without the natural extracts as well as those consisted in the same active ingredient with more of 90% of accuracy, but fails when different natural extract granulated are considered.

Acknowledgement: VLIR-UO project "Biopharmaceutical products from natural sources in the development of biotechnology" and CAPES-MES.

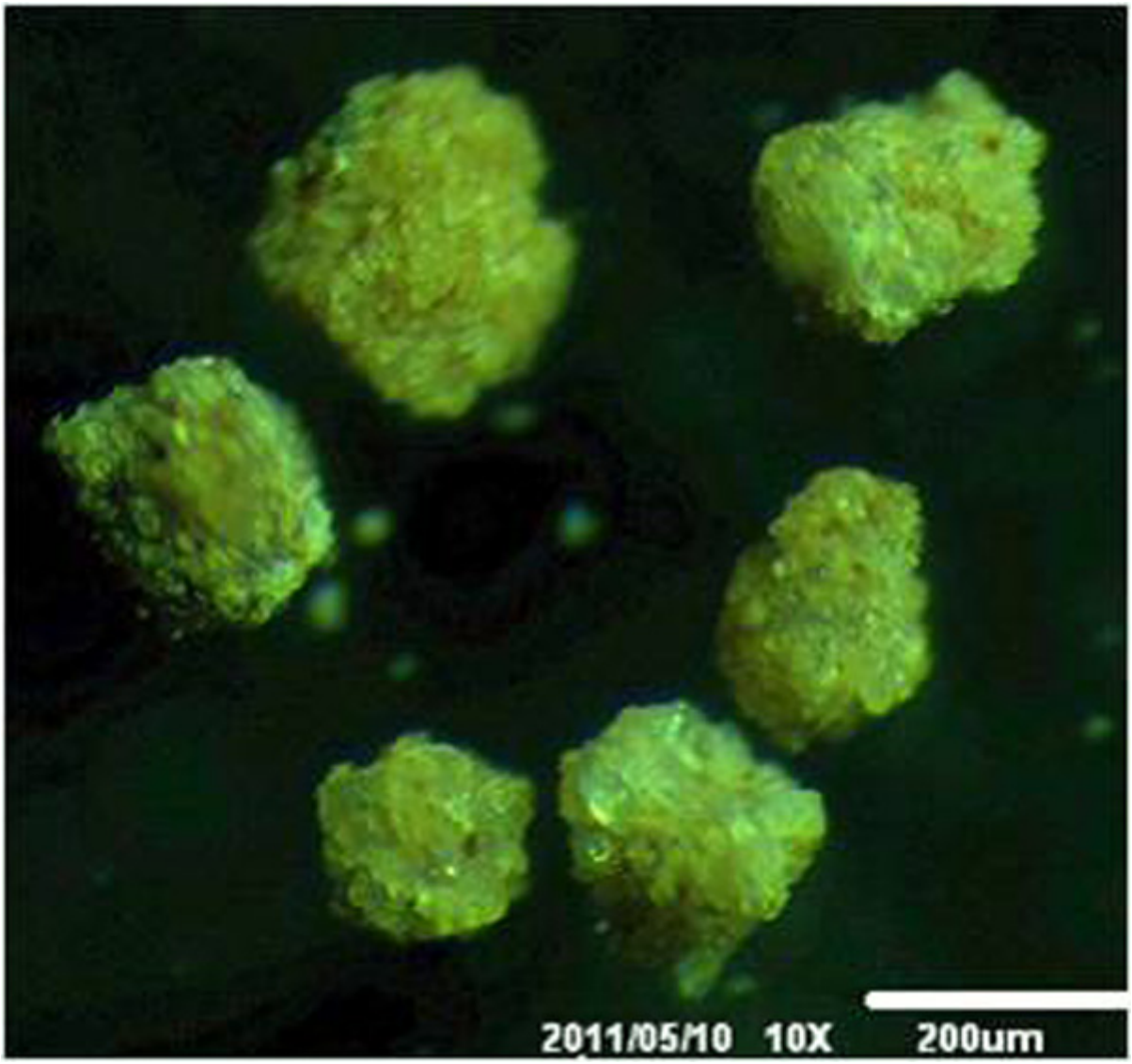

Fig. 1: Microphotograph of cellulose-lactose granulescontaining a natural soft extract.