The Instruct Image Processing Center (I2PC): support to structural biologists

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The Instruct Image Processing Center (I2PC) at the CNB-CSIC is the European Reference Center for infrastructure provision in Image Processing in Transmission Electron Microscopy and X-ray Microscopy. We provide support to structural biologists, helping them to maximize the extraction of biological knowledge from their electron microscopy images in three differents platforms: Instruct, iNEXT and Corbel. In iNEXT we give support at sample level, with analysis of EM grids and acquisition of EM images using a FEI Talos Arctica and a Falcon II direct detector. In Instruct we give support for full EM image processing using SCIPION package, including movie alignment, particle picking, classification, volume reconstruction and atomic structure determination. In Corbel we link the structural data with genomics and proteomics databases, with annotations of 3D protein structures at residue level using proteomic and genomic sources including UniProt and ENSEMBL databases, diseases and genomic variants, protein domain families, disordered regions, short linear motifs and immunological epitopes.