Title: FP-injectivity relative to a semidualizing bimodule

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In this paper, we extend the notion of C-injective module to that of C-FP-injective module, where $sC_R$ is a semidualizing bimodule over associative rings. We first obtain a result on the (pre)coversing and (pre)enveloping properties of C-FP-injective modules. Then we study right C-FP-injective dimension of modules via right derived functors of Hom. As applications, a necessary and sufficient condition of semidualizing modules having finite FP-injective dimension and a new characterization of left noetherian rings are given.

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