Identification of therapeutic targets in multiple myeloma

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Multiple myeloma (MM) is a hematological cancer that frequently acquires resistance to chemotherapeutic drugs. Additionally, many patients experience disease relapse, but these patients are difficult to treat as the cancer is often resistant to the previous treatment regimen.

Combination therapies are frequently successful at treating relapsed, treatment-resistant MM, leading researchers to seek out new therapeutic targets.

In this issue of *JCI Insight*, Yoichi Imai and colleagues at Tokyo Women's Medical University in Tokyo, Japan, demonstrate that MM cells express high levels of the protein phosphatase PPP3CA, a subunit of the signaling protein calcineurin, which can be targeted by the drug FK506.

Using a MM mouse model, Imai and colleagues showed that calcineurin is required for multiple myeloma cell growth and that inhibition of calcineurin with FK506 promoted MM cell death. Moreover, treatment of MM mice with panobinostat, which is currently FDA-approved for treatment of MM, and FK506 reduced MM growth in mice.

These findings indicate that PPP3CA and calcineurin may be suitable therapeutic targets for the treatment of MM.

More information: Yoichi Imai et al, Histone deacetylase inhibitor panobinostat induces calcineurin degradation in multiple myeloma, *JCI Insight* (2016). DOI: 10.1172/jci.insight.85061

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