

Dissemination Mechanism in Myeloma



Hi! I am writing a publication about myeloma dissemination. The maximum word-count is 250, but my draft has 10 words too many. Could you help me los 10 words, please? Here's the abstract:

Multiple myeloma involves early dissemination of malignant plasma cells across the bone marrow; however, the initial steps of dissemination remain unclear. Human mesenchymal stromal cells (hMSCs) in the bone marrow stimulate myeloma cell expansion (e.g., IL-6) and at the same time retain myeloma cells through chemokines (e.g., CXCL12) and adhesion factors. Hence, we hypothesized that the imbalance between cell division and retention drives dissemination. We present an in vitro model using primary hMSCs co-cultured with the myeloma cell line INA-6. Time-lapse microscopy reveal cell growth and attachment/detachment dynamics. Separation techniques (V-Well adhesion assay and well plate sandwich centrifugation) were established to isolate MSC-interacting myeloma subpopulations, which were characterized by RNAseq, cell viability and apoptosis. Results were correlated with gene expression data (n=837) and survival analyses of myeloma patients (n=536).

INA-6 rapidly adhered to dispersed hMSCs and proliferated into homotypic aggregates, but maximized heterotypic interactions on confluent hMSCs, which modulated apoptosis rates in a time-dependent manner. Single myeloma cells spontaneously detached from myeloma aggregates but not from hMSCs. Cell division initiated these detachments: daughter cells lost hMSC adhesion (nMA-INA6), whereas mother cells remained MSC-adherent (MA-INA6). Isolated nMA-INA6 indicated hMSC-autonomy through upregulation of proliferation-related genes and superior viability after IL6 withdrawal. MA-INA6 upregulated adhesion and retention factors (CXCL12). Interestingly, these factors were highly expressed in myeloma samples from patients with longer overall and progression-free survival, but their expression decreased in relapsed myeloma samples.

Taken together, the in vitro dissemination mechanism of INA-6 is a cycle of (re)attachment, proliferation, and detachment, involving adhesion factors that represent a bone marrow-retentive phenotype with potential clinical relevance.



Here's a revised version with 10 fewer words:

Multiple myeloma involves early dissemination of malignant plasma cells across the bone marrow; however, the initial steps remain unclear. Human mesenchymal stromal cells (hMSCs) stimulate myeloma cell expansion (e.g., IL-6) while retaining myeloma cells through chemokines (e.g., CXCL12) and adhesion factors. We hypothesize that the imbalance between cell division and retention drives dissemination.

We present an in vitro model using primary hMSCs co-cultured with the myeloma cell line INA-6. Time-lapse microscopy reveals cell growth and attachment/detachment dynamics. Separation techniques (V-Well adhesion assay and well plate sandwich centrifugation) isolate MSC-interacting myeloma subpopulations, characterized by RNAseq, cell viability, and apoptosis. Results correlate with gene expression data (n=837) and survival analyses of myeloma patients (n=536).

INA-6 adheres to dispersed hMSCs, proliferating into homotypic aggregates and maximizing heterotypic interactions on confluent hMSCs, modulating apoptosis rates in a time-dependent manner. Single myeloma cells spontaneously detach from myeloma aggregates but not hMSCs. Cell division initiates detachments: daughter cells lose hMSC adhesion (nMA-INA6), whereas mother cells remain MSC-adherent (MA-INA6). Isolated nMA-INA6 indicates hMSC-autonomy through upregulated proliferation-related genes and superior viability after IL6 withdrawal. MA-INA6 upregulates adhesion and retention factors (CXCL12).

These factors are highly expressed in myeloma samples from patients with longer overall and progression-free survival, but decrease in relapsed myeloma samples.

In vitro dissemination of INA-6 involves a cycle of (re)attachment, proliferation, and detachment, with adhesion factors representing a bone marrow-retentive phenotype with potential clinical relevance.



is there a one word synonym for "in all cases" ?



Yes, "always" can be used as a one-word synonym for "in all cases."



are there one word synomyns for "at the same time" to be used at the beginning of a sentence?



Certainly! Here are a few options:

1. Simultaneously
2. Concomitantly
3. Concurrently
4. Meanwhile
5. Likewise



are INA-6 CD45 positive or negaitve?



INA-6 is a human myeloma cell line, and it's typically characterized as CD45 negative. CD45 is a common marker for leukocytes, and myeloma cells, being of plasma cell origin, usually lack expression of this marker.

ChatGPT kann Fehler machen. Überprüfe wichtige Informationen.