

D Cell Attachment Dynamics Model



I want to define a new term: Cell Attachment and Detachment Dynamics (CADD). It is defined as such (warning, Latex code):

```
\newcommand{\footcadd}{%
  \emph{\acf{CADD}} (defined in this work): The observation and measurement
  of time-dependent changes in cell adhesion and detachment events.
  \ac{CADD} characterizes the time cells spend attached, migrating or
  detached and associates these phases with molecular signatures, such as
  \ac{CAM} expression or cell signaling mediated by \acp{CAM} or the
  microenvironment. \ac{CADD} expands traditional \emph{cell adhesion} by a
  time component and implies an intention to predict attachment and
  detachment events. A focus on dynamics is especially relevant for
  suspension cells that exhibit intricate attachment and detachment
  behavior.
  %
}
```

This is the basis for the Dynamic Adhesion Hypothetical Framework for Myeloma Dissemination based around these hypotheses:

\textbf{Constructing a Generalizable Hypothetical Framework of Dissemination:}
 A mechanistic understanding of myeloma dissemination remains elusive. Although \cite{zeissigTumourDisseminationMultiple2020} described dissemination as a multistep process, evidence is largely collected for individual steps, leaving the connections between these steps unproven. As a result, the process of dissemination is a patchwork of evidence fragments. The following sections aim to integrate such fragments, especially those derived from the INA cell line in this work, to construct a more coherent understanding of myeloma dissemination.

In this context, the author introduces the \emph{Dynamic Adhesion Hypothetical Framework for Myeloma Dissemination}, which leverages direct observations of \ac{CADD}\footnote{\footcadd\label{foot:cadd}}. \ac{CADD} characterizes the time-dependent changes in cell adhesion and detachment, associating these phases with molecular signatures like \ac{CAM} expression or cell signaling mediated by \acp{CAM} and the microenvironment. By adding a temporal component, \ac{CADD} aims to predict attachment and detachment events.

```
\newcommand{\caddadaptation}{ %
  \ac{CADD} is adapted in response to different microenvironments faced
  during dissemination %
}
```

```

}
\newcommand{\caddadaptationtitle}{ %
  \textit{Hypothesis 1}: \ac{CADD} is Adapted during Dissemination%
}%

\newcommand{\caddadaptability}{ %
  High adaptability of \ac{CADD} is a hallmark of aggressive myeloma %
}%
\newcommand{\caddadaptabilitytitle}{ %
  \textit{Hypothesis 2}: High Adaptability of \ac{CADD} is a Hallmark of
  Aggressive Myeloma %
}%

\newcommand{\cadddiversity}{ %
  \ac{CADD} is highly diverse within both patients and cell lines %
}%
\newcommand{\cadddiversitytitle}{ %
  \textit{Hypothesis 3}: \ac{CADD} is Highly Diverse Within both Patients
  and Cell Lines%
}%

\newcommand{\caddtrigger}{ %
  Detachment is caused by multiple cues of varying nature, including
  external mechanical forces, cell division, loss of \ac{CAM} expression, or
  even pure chance. %
}%
\newcommand{\caddtriggertitle}{ %
  \textit{Hypothesis 4}: Detachment is Caused by Multiple Cues of Varying
  Nature %
}%

```

My problem is now that I don't like the terminology of the 2nd hypothesis: CADD Adaptability is nice, since it shows the clear connection to the first Hypothesis (CADD Adaption), yet the term Adaptability does not include the main focus on the hypothesis, which is the rapidness of CADD adaptations. Do you have any suggestions for better terms?



Certainly! To capture the essence of rapid adaptations in your second hypothesis while maintaining coherence with the first hypothesis (CADD Adaptation), you could consider using terms that emphasize both adaptability and rapidity. Here are a few suggestions:

1. **Dynamic Adaptation of CADD**

- This term emphasizes the dynamic nature of adaptations, implying rapid changes in response to different microenvironments.

2. **Rapid CADD Adaptation**

- This directly highlights the rapidity of adaptations within the term itself.

3. Agile CADD Response

- "Agile" suggests quick and adaptive responses, aligning well with the concept of rapid adaptations.

4. Flexible CADD Dynamics

- "Flexible" implies adaptability while "dynamics" maintains the focus on the dynamic nature of CADD.

5. Adaptive Plasticity of CADD

- "Plasticity" indicates the ability to adapt rapidly and flexibly.

6. Dynamic Adjustments of CADD

- "Dynamic Adjustments" suggests ongoing and quick changes in response to environmental cues.

Each of these terms aims to capture the essence of rapid adaptation within the framework of your hypothesis on CADD. You can choose one that best fits the specific nuances and focus you wish to convey.

ChatGPT kann Fehler machen. Überprüfe wichtige Informationen.