

An Ode to PDE

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*DNA, a marvel divine.
In every cell, a code so fine.
A sum greater than its parts,
The genome is at the heart.*

*You don't want to lose a piece.
Mutations abound when repairs cease.
However, you may not know
Some genomes can take quite a blow.*

*Programmed DNA elimination, or "PDE"
Reduces the genome as you will see.
Throw out a whole chromosome or just a piece
But not in the germline or it will cease.*

*In ciliates, in copepods, in bandicoots and zebra finch
In lamprey, in moths, in nematodes and hagfish
Under the scope, it's in full view.
And maybe someday we'll find it in you!*

*So, what happens to this "trash" DNA?
Just where and when does it go away?
To the micronuclei from the metaphase plate,
Degradation will seal its fate.*

*Little embryo oh so still.
Yet within the nucleus there is no chill.*

*Bang, rattle, rip, boom
there goes DNA into the tomb.*

*The telomeres are sliced off in the carnage.
They are disposed of like garbage.
Genes are not safe from the bloodshed
And repeats, too, feel the dread.*

*Some chromosomes are not so stagnant
Programmed to become small fragments.
Yet still in the soma they perform,
Contrasting with the karyotypic norm.*

*Tracing contacts through Hi-C,
Confirm our findings microscopically,
END-seq shows just where it's cut,
Myriad techniques keep us out of a rut.*

*The bloodbath is over oh so fast.
Before you know it, it's in the past.
Just like a phoenix soaring from the ash
Telomeres begin to regrow in a flash.*

*But wait, isn't the genome sacred and holy?
Why does it become so torn and lowly?
A mystery of over 100 years
An answer, in fact, would bring me to tears.*