Surfactant

By Victoria Chan

Surfactant is my name, you see
And this is the start of my story -
Brown and colleagues, they all found
Lung characteristics that astound:
Air-filled sacs took more pressure
Than saline-filled to inflate larger!
What could this trend be due to?
Well I'll take time to explain to you!

This is a fact that can't be denied:
Air entering the lungs is humidified,
So alveoli get an inside cover
Of water molecules all over.
This water creates surface tension
Which is a force that deserves great mention.
As surface tension causes inward recoil,
Alveoli collapse – what turmoil!
So I, surfactant, am in great demand
For a normal life as evolution has planned.
Now let's go see how I am made
To appreciate the process in which I aid.

I begin my life in a Type II cell,
In lamellar bodies I specially dwell.
Phospholipids are my main agent,
And proteins are also present:
Sp-A, B, C, and D
Will all help me on my journey.
As I am exocytosed out of the cell
Through tubular myelin I propel
All over the surface of alveoli
To bring the tension to low from high.
There I do my job with glee
To help my organism breathe easily!

However all things must come to an end
So I turnover to make room for my friends.
I form a micelle from the monolayer
And have two choices of routes after:
I could be cleared by macrophages
But I won't live to see how my system ages.
So I have a preference for recycling
Where I can continue in helping.
As long as the cycling is sustained
Normal lung compliance will be maintained.
Now remember all that has come to be
Is the work of surfactant – that's me!
So thank evolution as I am here
To keep you in good health and cheer!