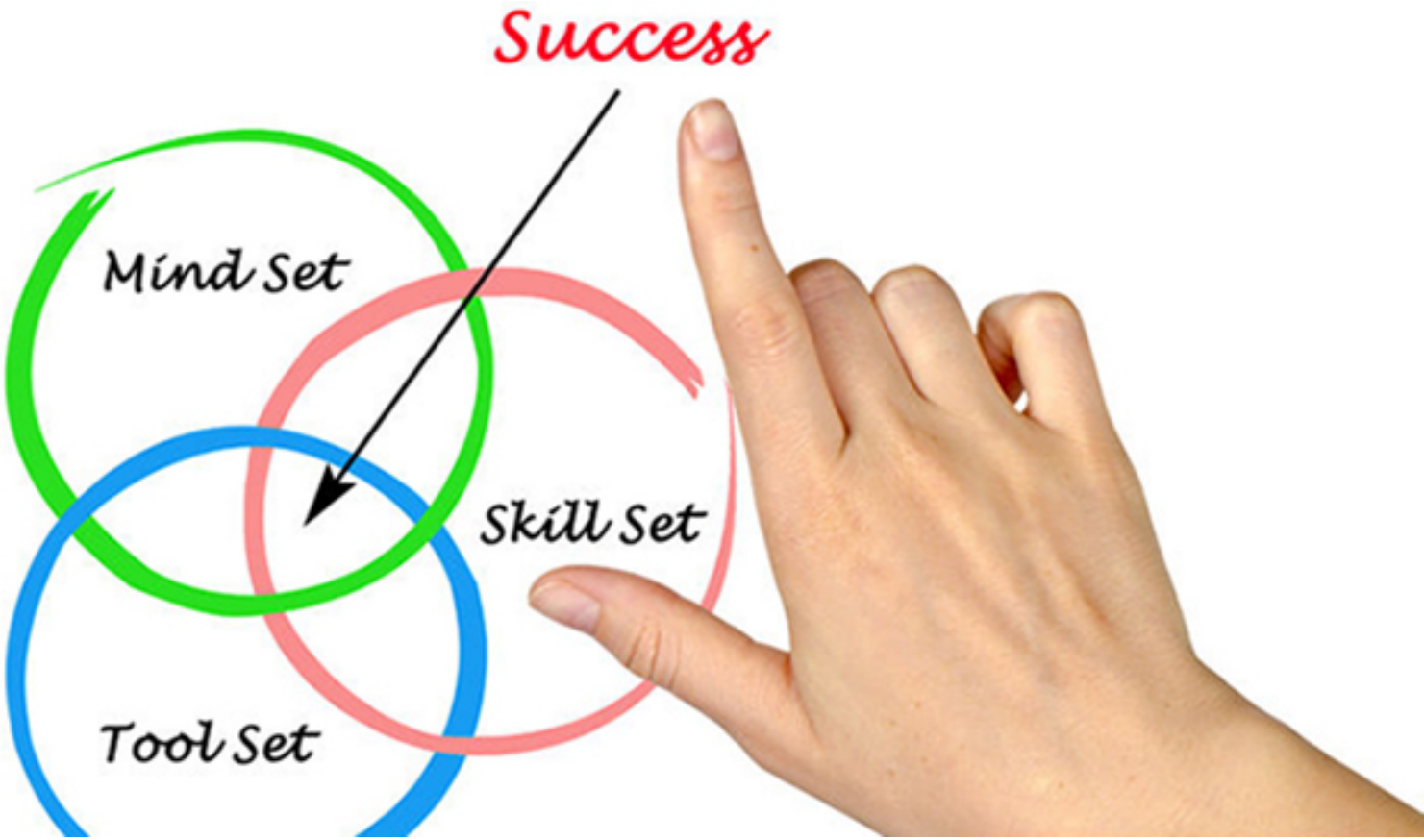
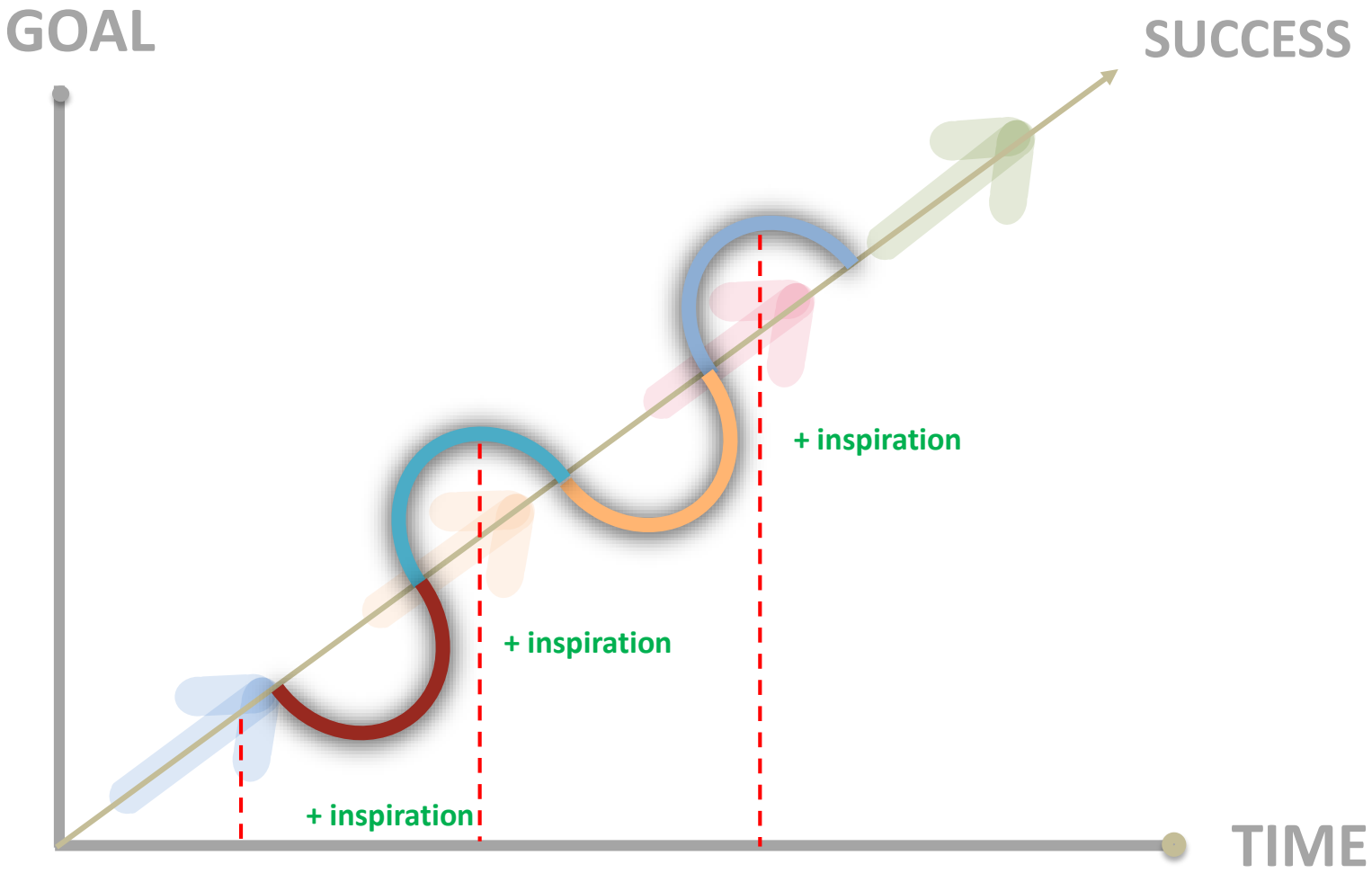
Success in research: mindset, toolset and skill set

Teerapol Srichana, BPharm, MPharm, PhD

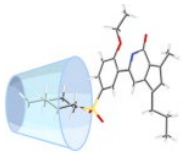

Success
Mind Set
Skill Set
Tool Set

Mindset
How you see the world and how you think about it.
Skillset
Your capabilities based on knowledge & experience.
lernOS
Wheel
Toolset
The methods and tools you use to get things done.

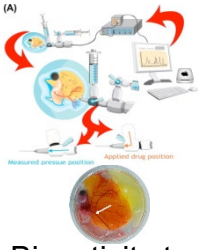
CC BY


GOAL
SUCCESS
+ inspiration
+ inspiration
+ inspiration
TIME

Research roadmap



MDI System
Stability Test

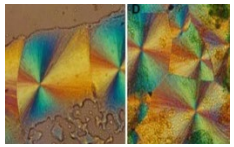


Bioactivity test
in blood vessel

In vivo animal study

In vivo human study

Sildenafil Lung Delivery



Amphotericin B
Liquid Crystal

Bioactivity Test

Safety and Toxicity Test

Stability Test

In vivo animal study

In vivo human study

Amphotericin B for Lung Fungal Infection

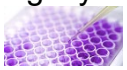
Anti-tuberculosis

Proliposome

In vitro aerosol
characterization

In vivo animal study

Phagocytosis

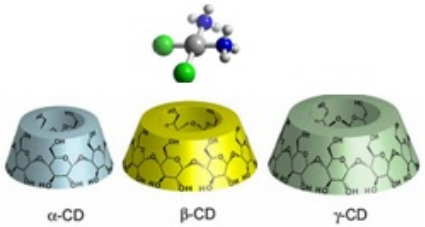


Bioactivity Test

Clinical Trial
phase I and II

Anti-Tuberculosis Aerosols

2016 2017 2018 2019 2020



Cisplatin-Cyclodextrin Complex

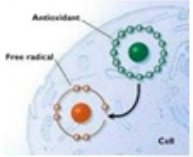
Curcumin bound hydroxyapatite

Test of synergistic effect other plant extracts

In vitro cell culture study
- growth inhibition
- release test

Cancer Research

Plant extracts of interest



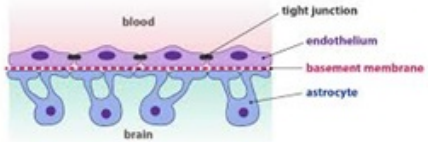
Test of anti-oxidation

Test of anti-inflammation

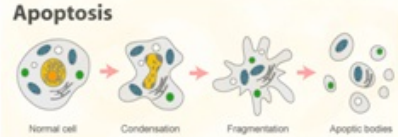
Product preparation
Permeability test
Stability test

Cosmeceuticals

Pigmented rice extracts



Test of passing blood brain barrier

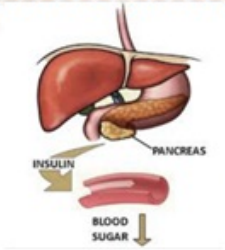


Test of apoptotic induction on neurons

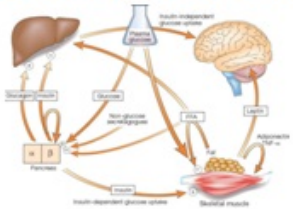
In vitro cell culture study

Neuroprotection of plant extracts

Plant extracts of interest



Test of improved insulin secretion



Test of improved glucose uptake

In vitro cell culture study

Anti-diabetes of plant extracts

Research skills

- Planning
- Execution
- Analysis
- Reporting

Planning

- Define clear objectives
- Identify context
  - importance & relevance
- Literature review
- Study design
- Determine analysis to meet objectives
- Protocol – Schedule and assign tasks

Failing to plan is planning to fail

- Research projects require a long–term integration of effort
- ‘Activity trap’ being busy ≠ achieving progress

Execution

- Skills usually in your subject area
- Keep to protocol
- Record accurately
- Flexibility

Analysis

- Check data
- Carry out appropriate analysis
- Perform diagnostic checks on model assumptions
- Follow up unexpected features of data

Reporting

- Determine target audience
- Follow style & detail of journal
- Writing – Practice – practice – practice – courses on writing and presentation