SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES

Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai
Approved by Pharmacy Council of India, New Delhi.
Coimbatore -641035

COURSE NAME : PHARMACOGNOSY

D.PHARM/ I YEAR

TOPIC:CARDIO TONIC- ARJUNA , DIGITALIS

DESIGN THINKING STAGES IN CLASSIFICATION

Empathize: Understand the users — in this case, students, pharmacists, or researchers who use the alphabetical classification system.

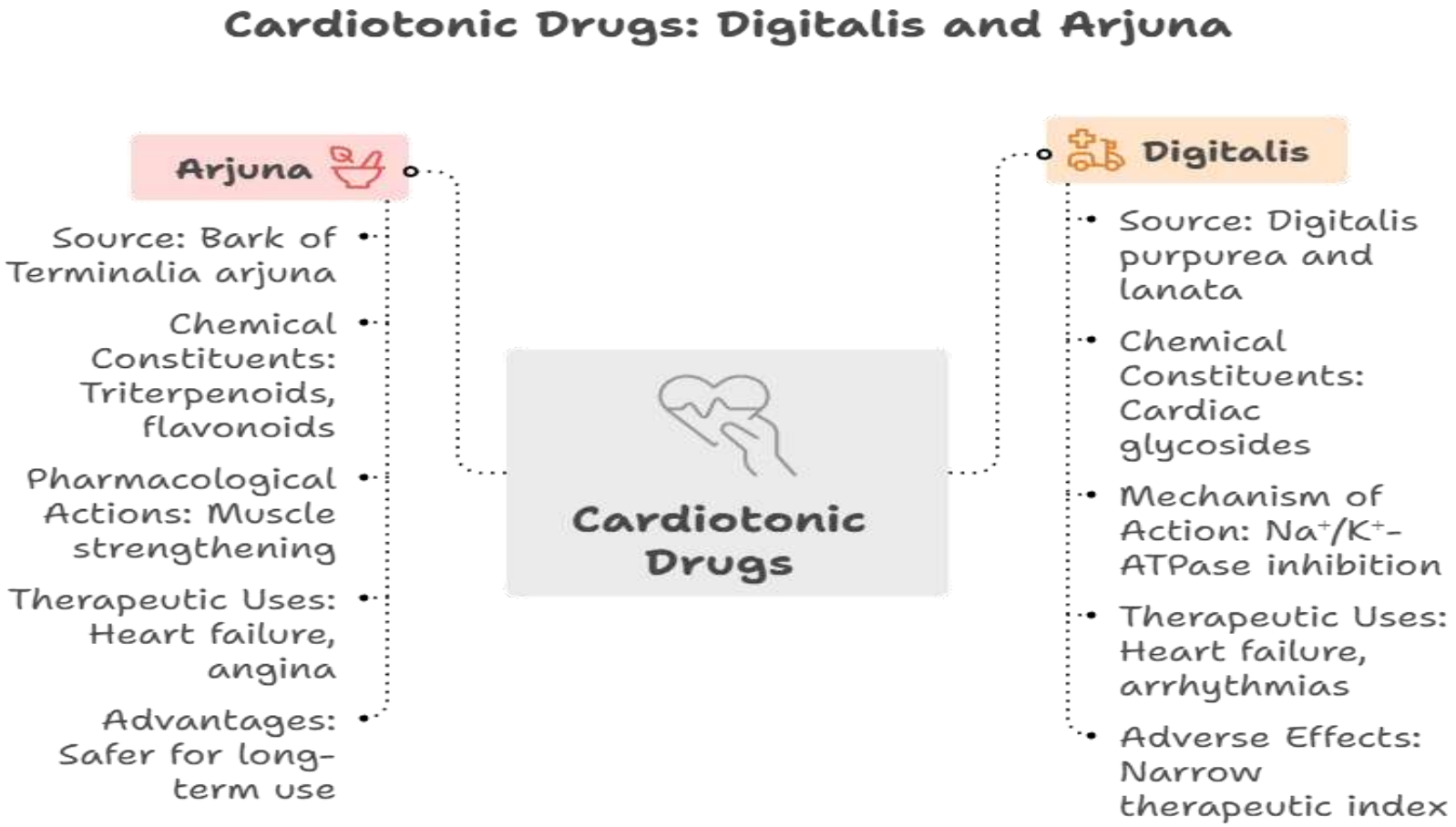
Define: Clearly define the problem based on the insights from the empathize stage.

Ideate: Generate possible solutions or improvements.

Prototype: Create a tangible version of your solution

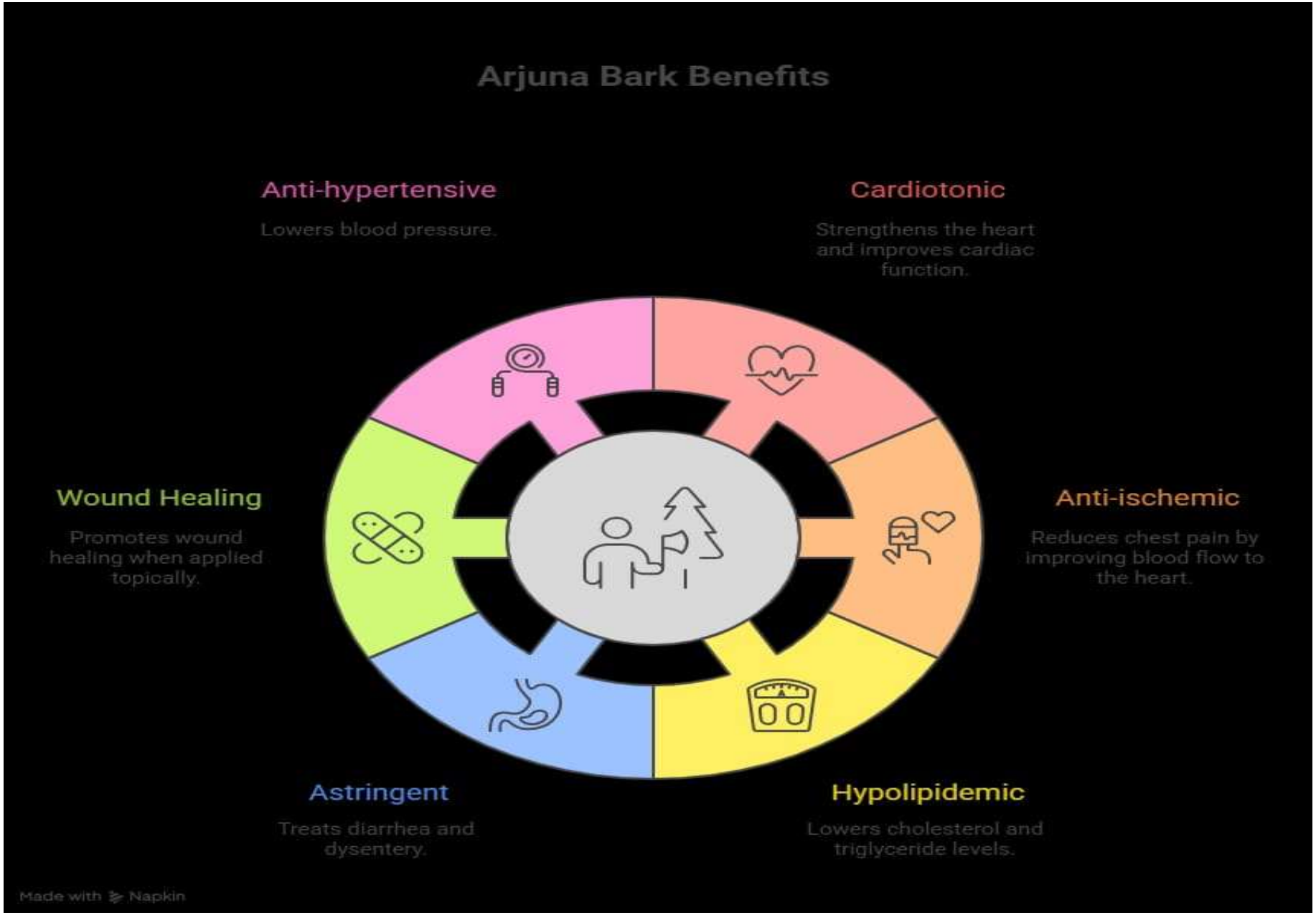
Test: Evaluate the prototype with real users.

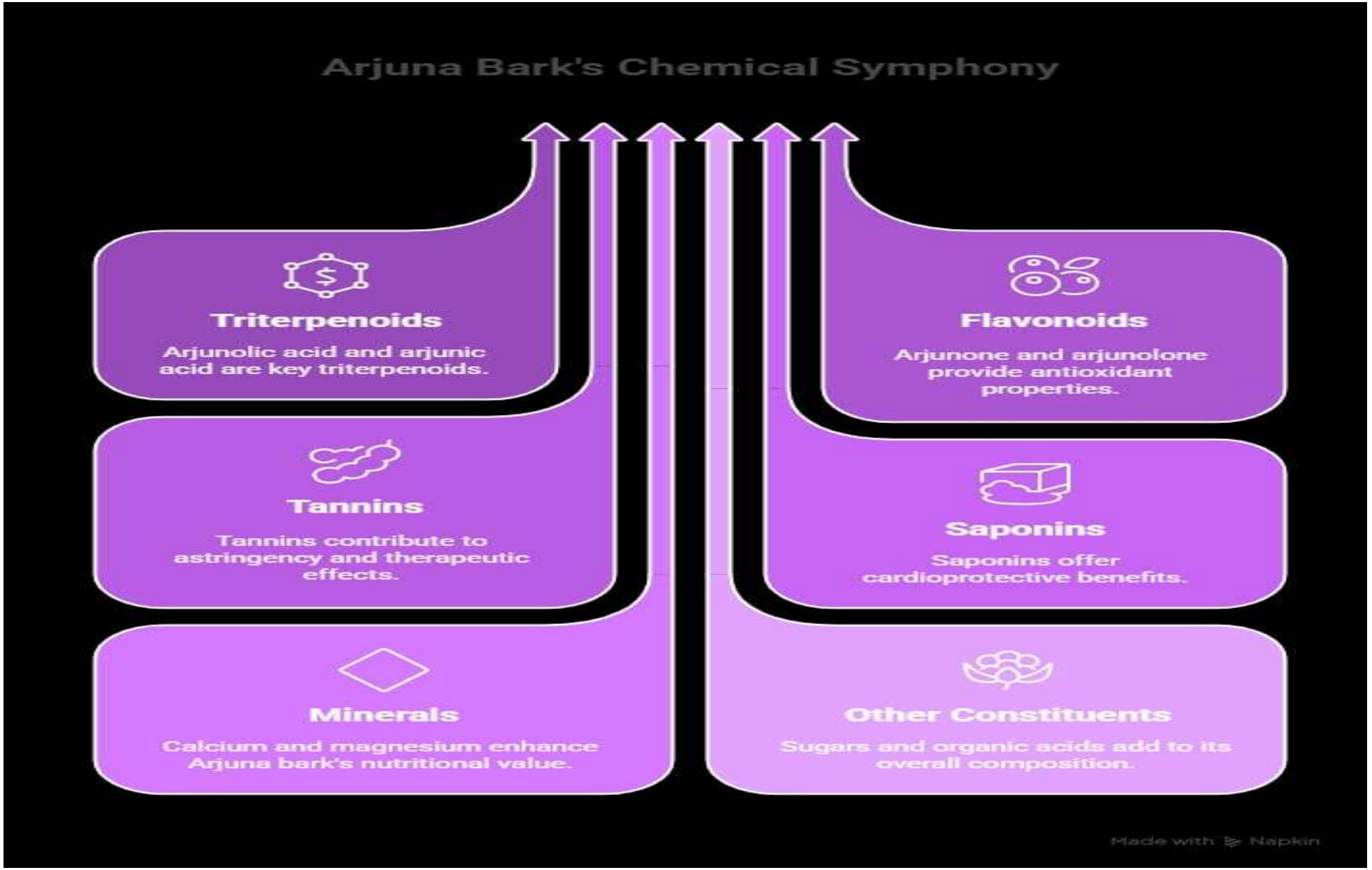
MINDMAP

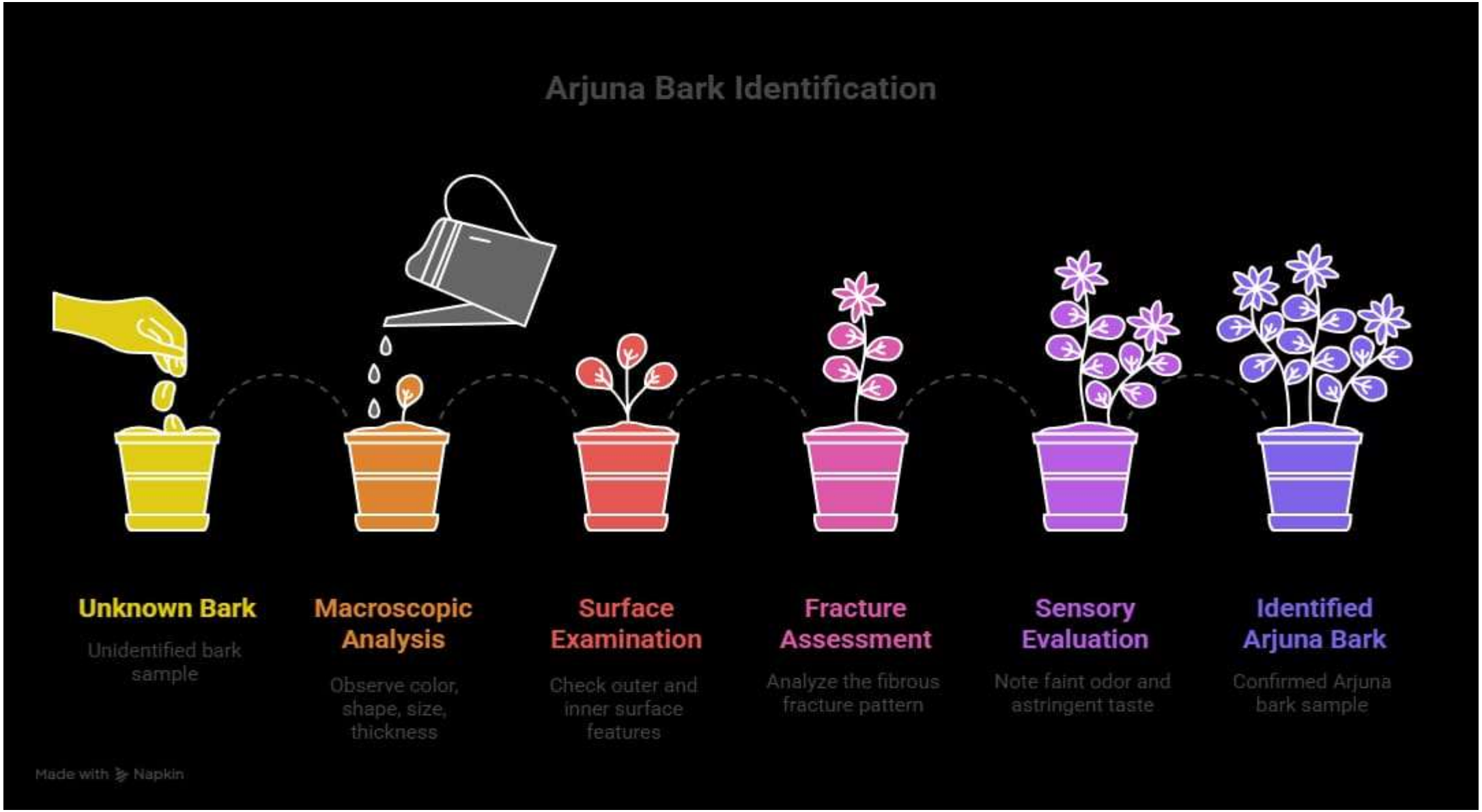



Arjuna Bark Benefits
Cardiovascular Diseases
Management of angina, heart failure, hypertension, and hyperlipidemia.
Wound Healing
Topical application for promoting wound healing.
Inflammatory Conditions
Potential use in treating inflammatory disorders.
Metabolic Disorders
Management of hyperlipidemia and related metabolic disorders.
Made with Napkin

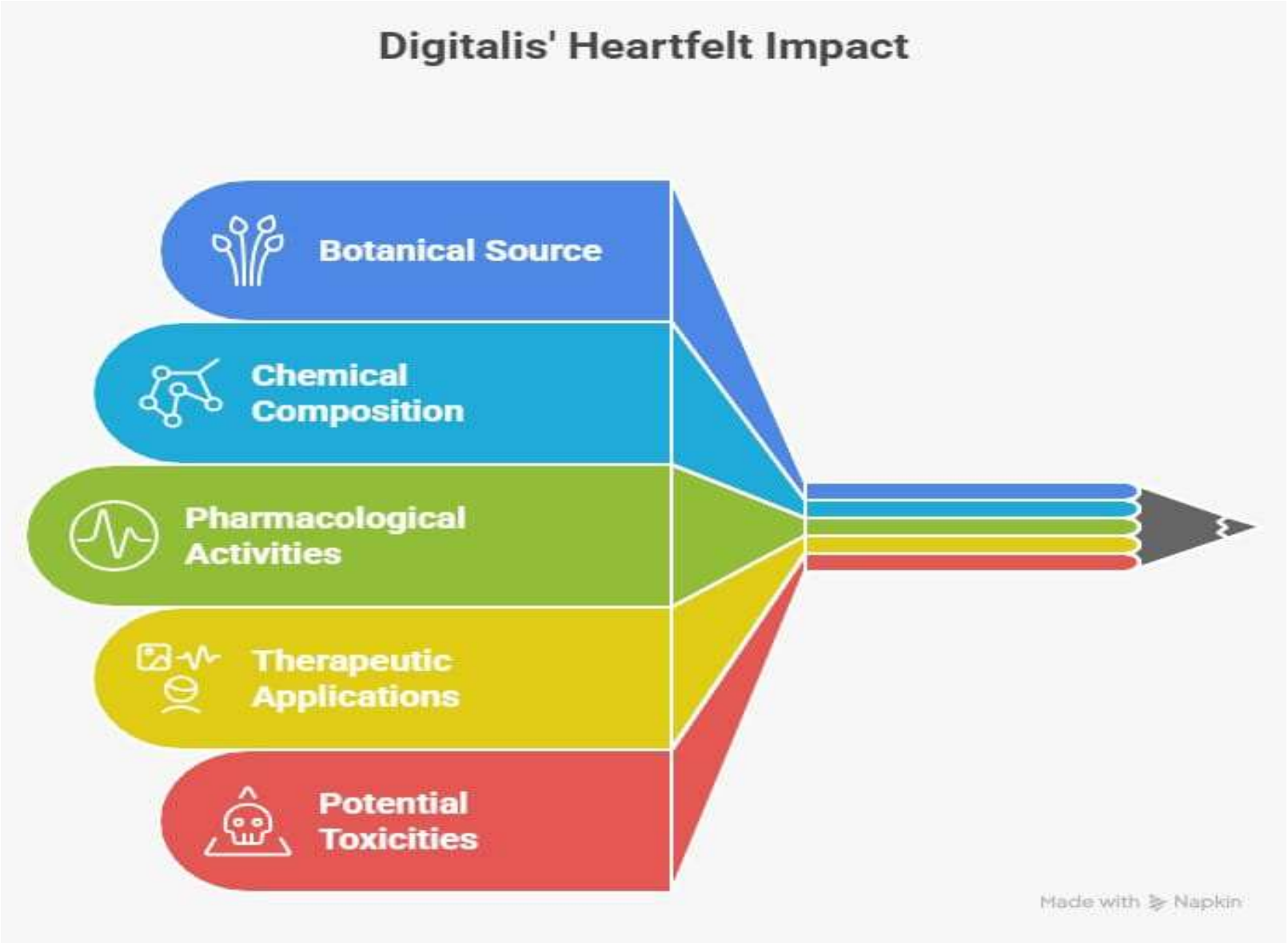

Arjuna Bark Structure
Crystals & Tannins
Prisms and rosettes scattered throughout
Phloem Fibers
Long, thick-walled fibers in bands
Cortex
Parenchyma cells with starch and crystals
Medullary Rays
Radially arranged rays traversing phloem
Secondary Phloem
Sieve elements and phloem fibers
Cork
Rectangular, thin-walled protective cells
Made with Napkin

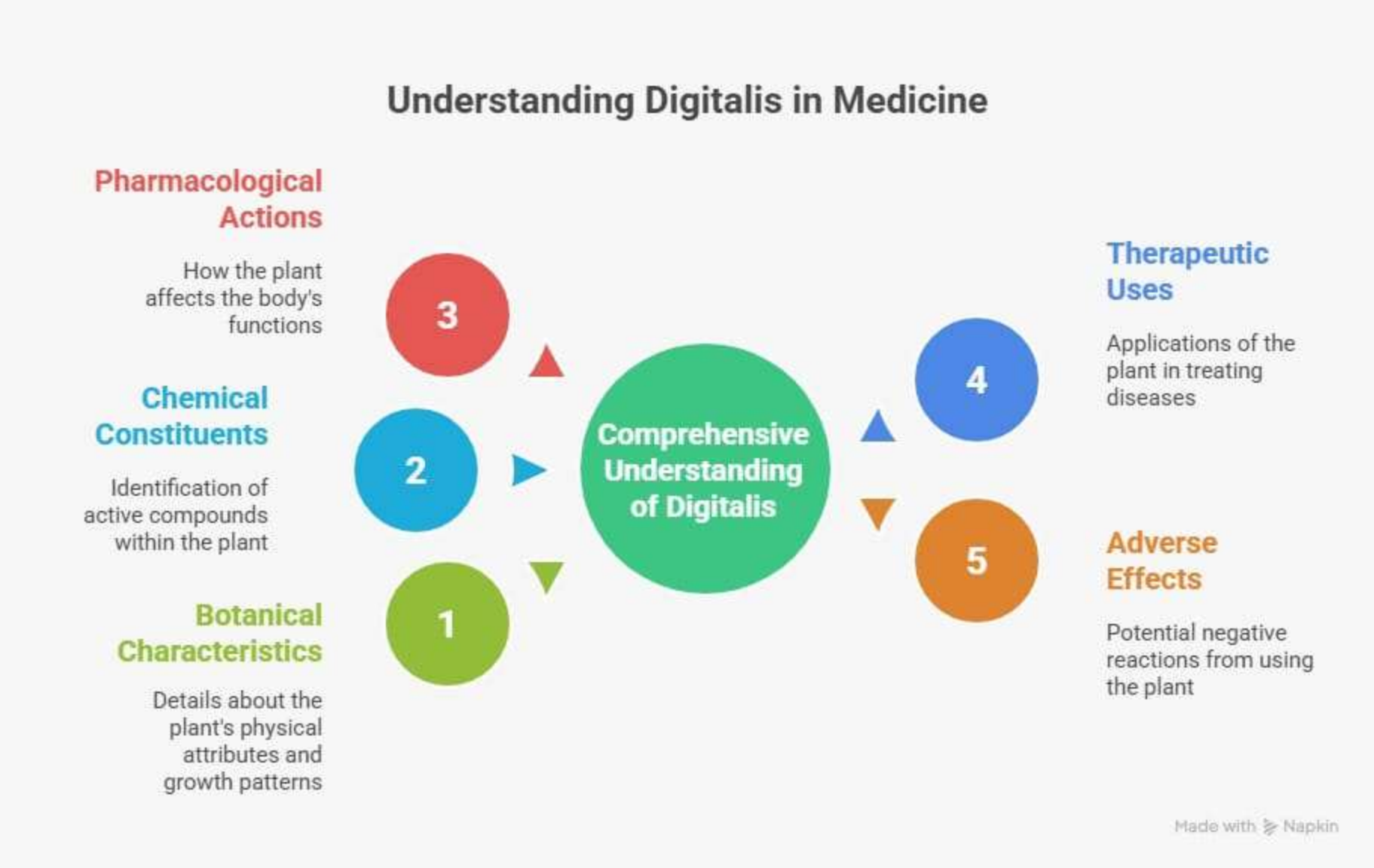

Arjuna Bark Benefits
Anti-hypertensive
Lowers blood pressure.
Cardiotonic
Strengthens the heart and improves cardiac function.
Wound Healing
Promotes wound healing when applied topically.
Anti-ischemic
Reduces chest pain by improving blood flow to the heart.
Astringent
Treats diarrhea and dysentery.
Hypolipidemic
Lowers cholesterol and triglyceride levels.
Made with Napkin

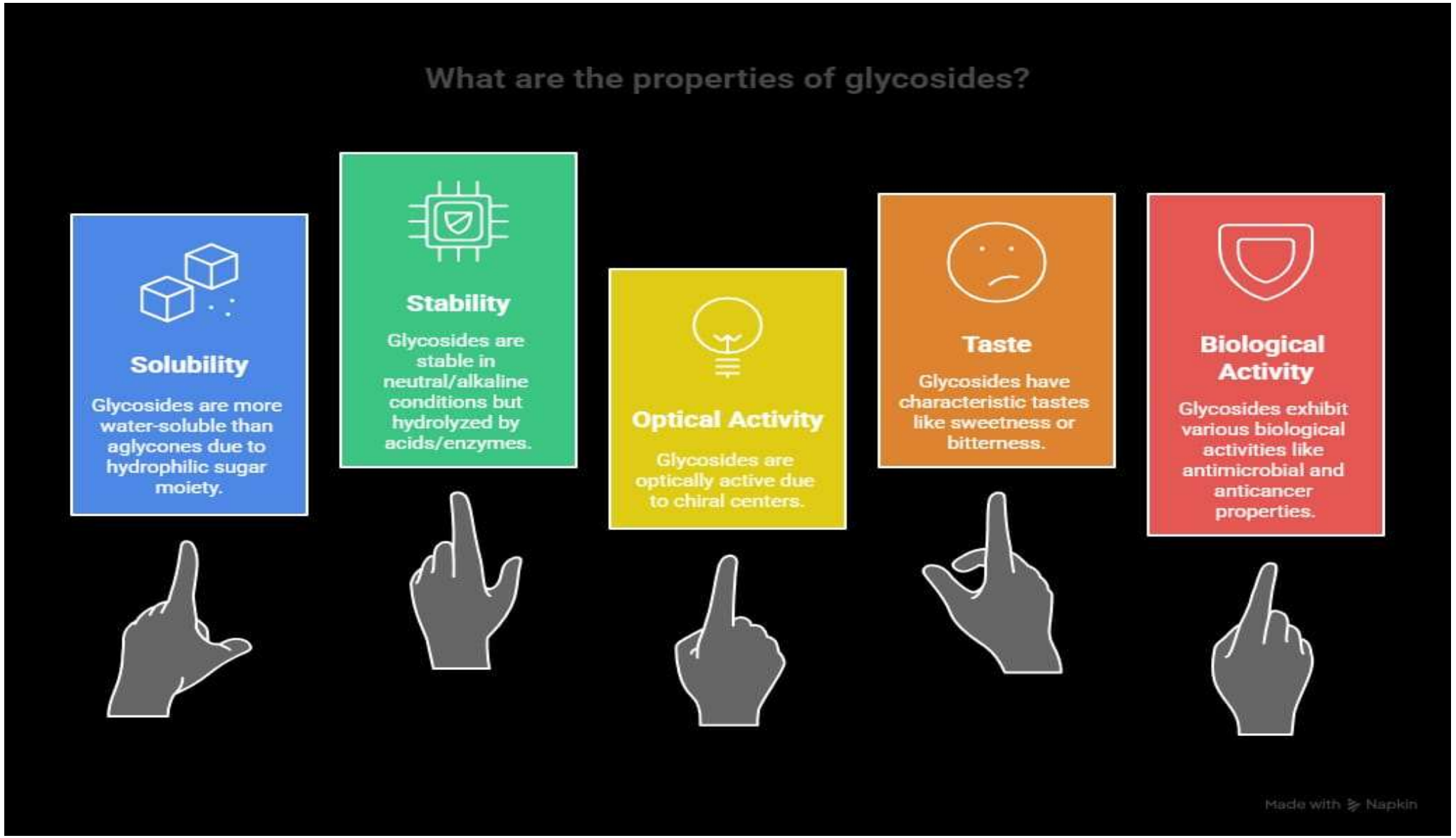

Arjuna Bark's Chemical Symphony
Triterpenoids
Arjunolic acid and arjunic acid are key triterpenoids.
Tannins
Tannins contribute to astringency and therapeutic effects.
Minerals
Calcium and magnesium enhance Arjuna bark's nutritional value.
Flavonoids
Arjunone and arjunolone provide antioxidant properties.
Saponins
Saponins offer cardioprotective benefits.
Other Constituents
Sugars and organic acids add to its overall composition.
Made with Napkin

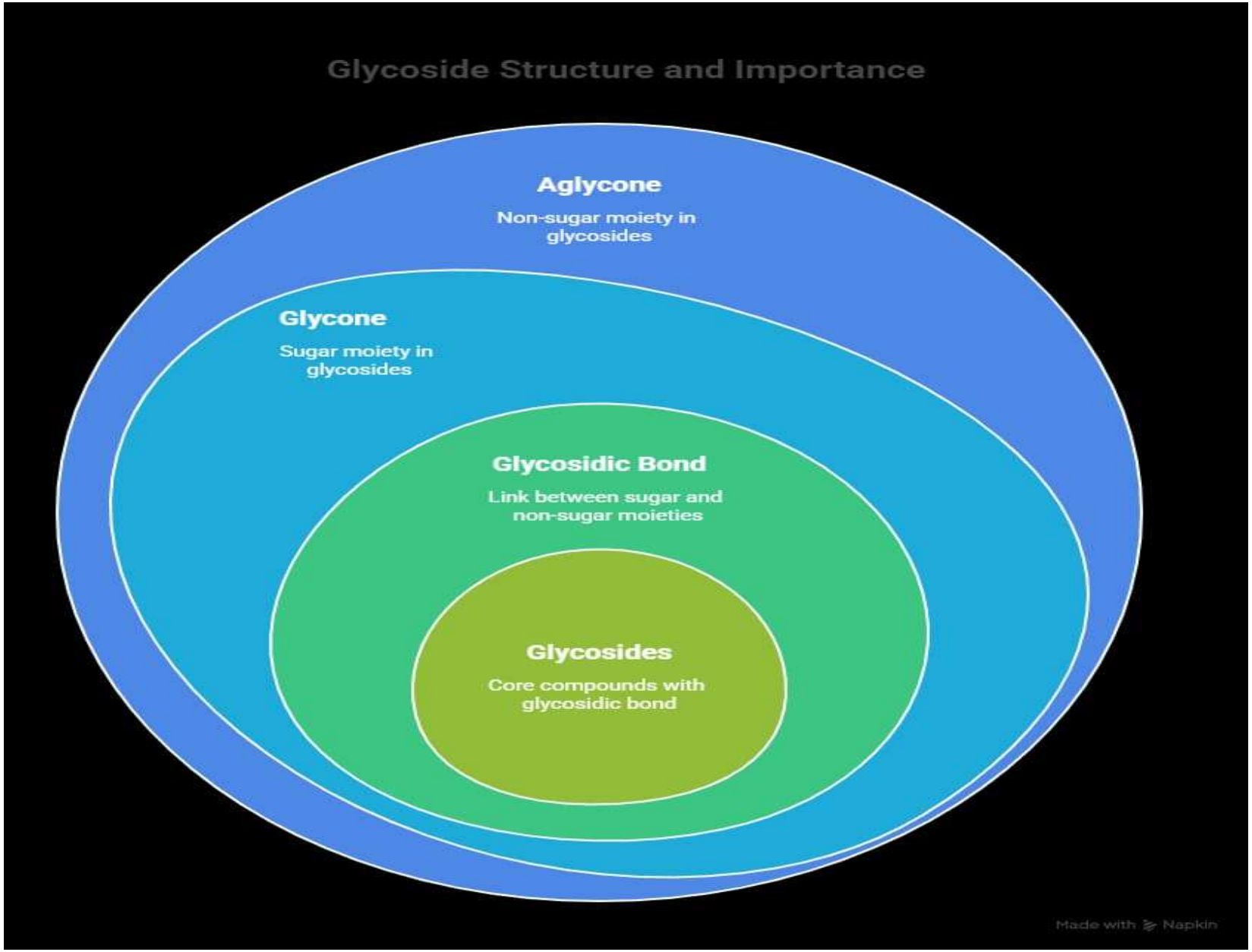

Arjuna Bark Identification
Unknown Bark
Unidentified bark sample
Macroscopic Analysis
Observe color, shape, size, thickness
Surface Examination
Check outer and inner surface features
Fracture Assessment
Analyze the fibrous fracture pattern
Sensory Evaluation
Note faint odor and astringent taste
Identified Arjuna Bark
Confirmed Arjuna bark sample
Made with Napkin

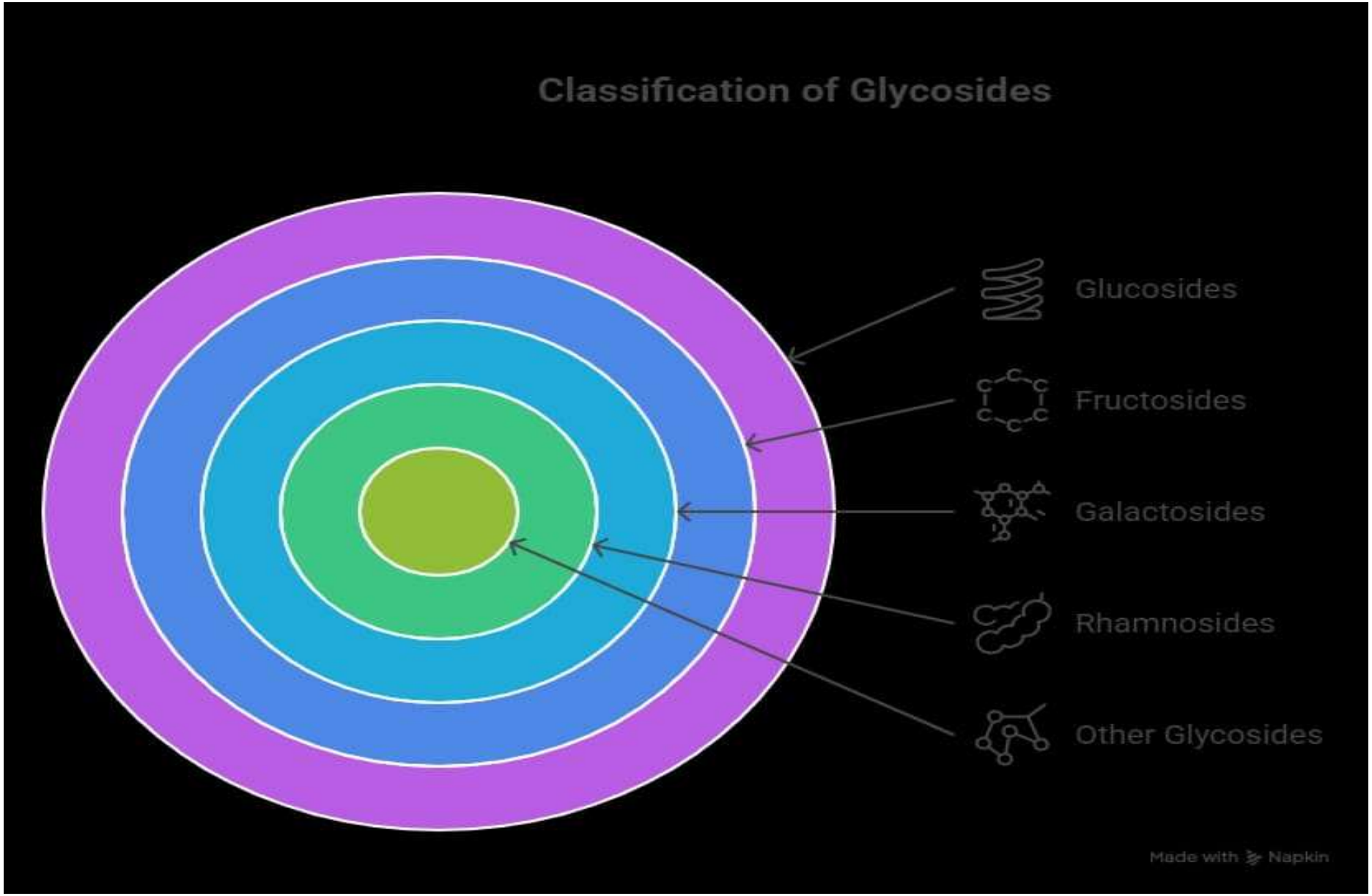

Arjuna Bark Benefits
Cardiovascular Diseases
Management of angina, heart failure, hypertension, and hyperlipidemia.
Wound Healing
Topical application for promoting wound healing.
Inflammatory Conditions
Potential use in treating inflammatory disorders.
Metabolic Disorders
Management of hyperlipidemia and related metabolic disorders.
Made with Napkin

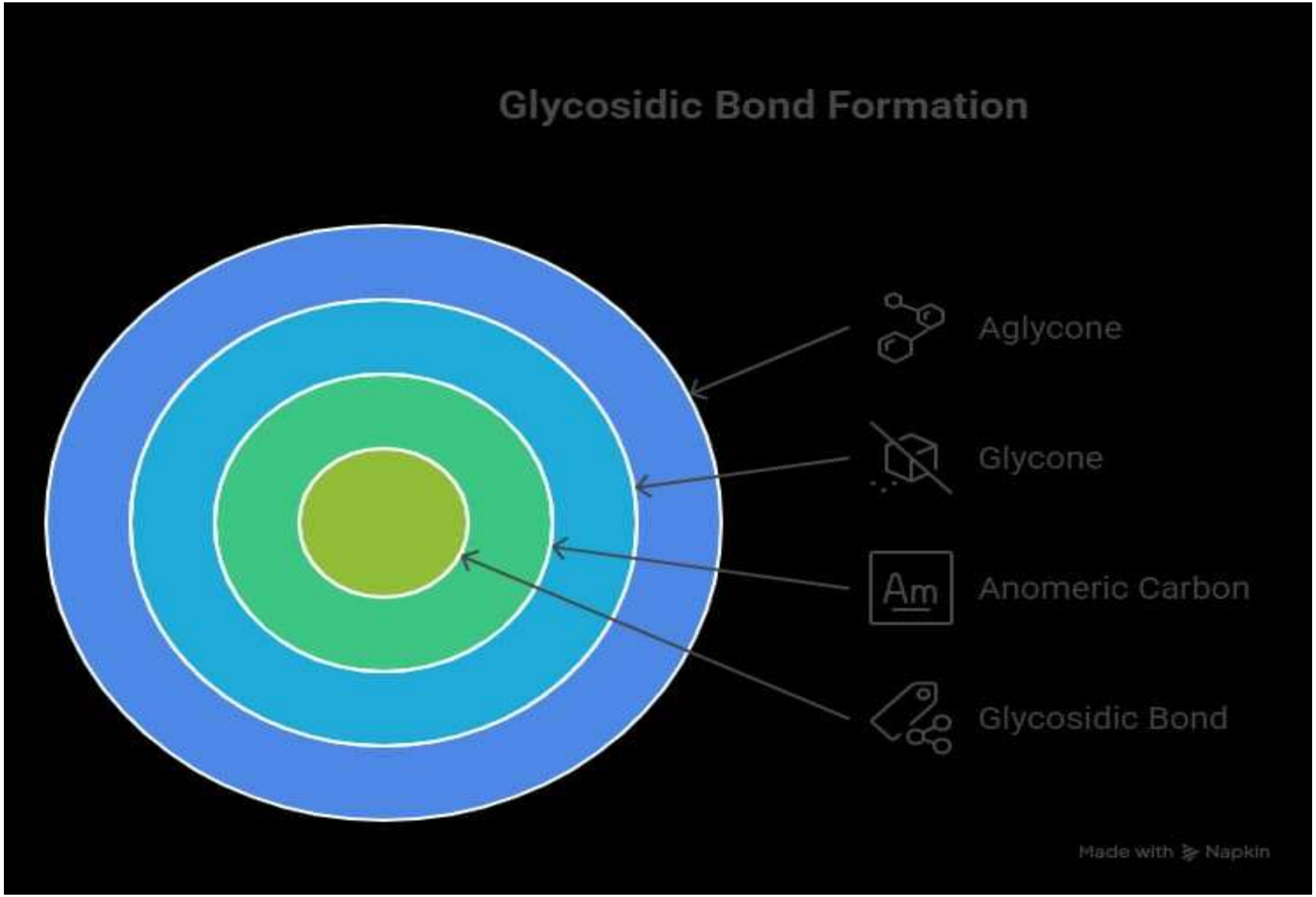

Digitalis' Heartfelt Impact
Botanical Source
Chemical Composition
Pharmacological Activities
Therapeutic Applications
Potential Toxicities
Made with Napkin

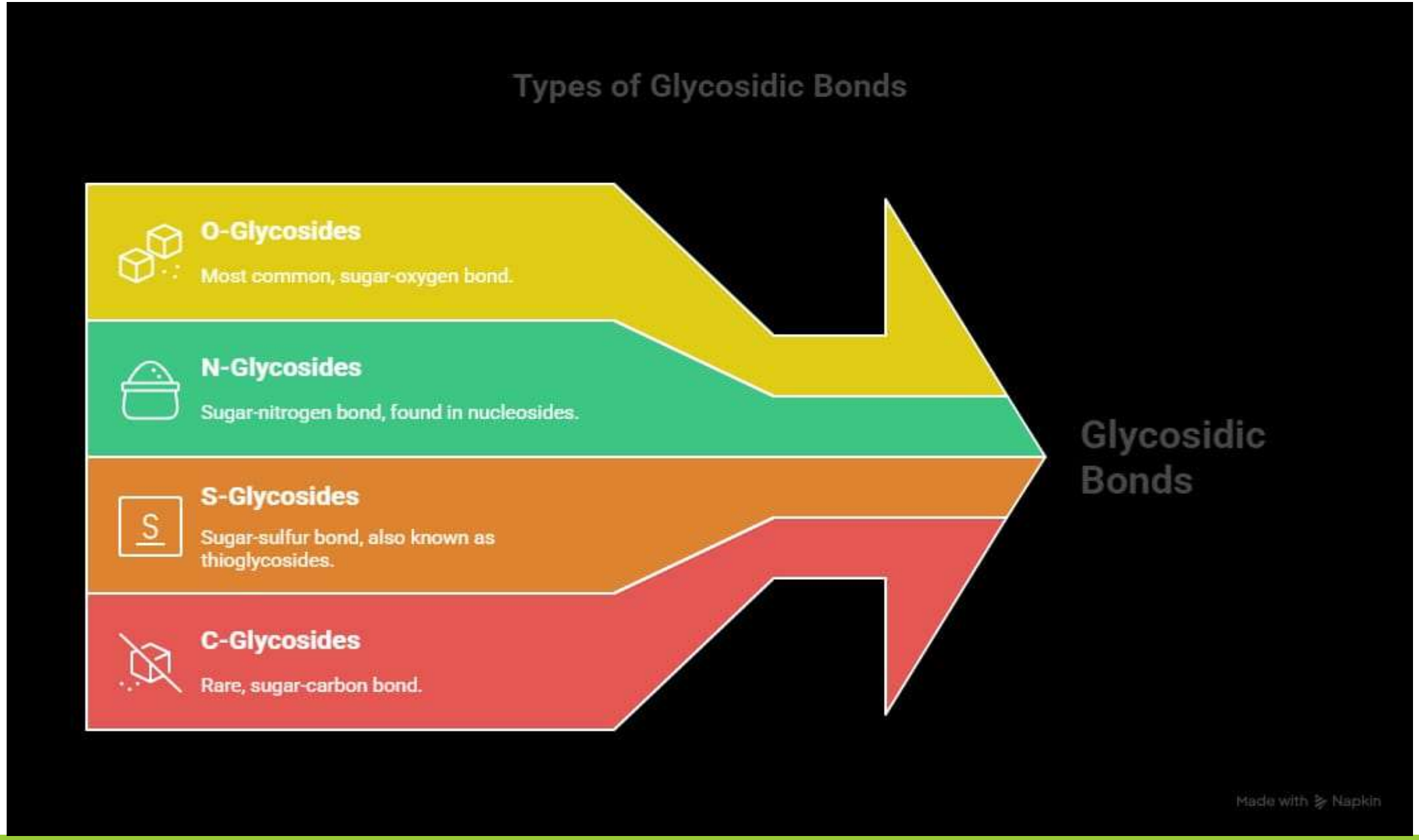

Understanding Digitalis in Medicine
Pharmacological Actions
How the plant affects the body's functions
Chemical Constituents
Identification of active compounds within the plant
Botanical Characteristics
Details about the plant's physical attributes and growth patterns
3
2
1
Comprehensive Understanding of Digitalis
4
5
Therapeutic Uses
Applications of the plant in treating diseases
Adverse Effects
Potential negative reactions from using the plant
Made with Napkin

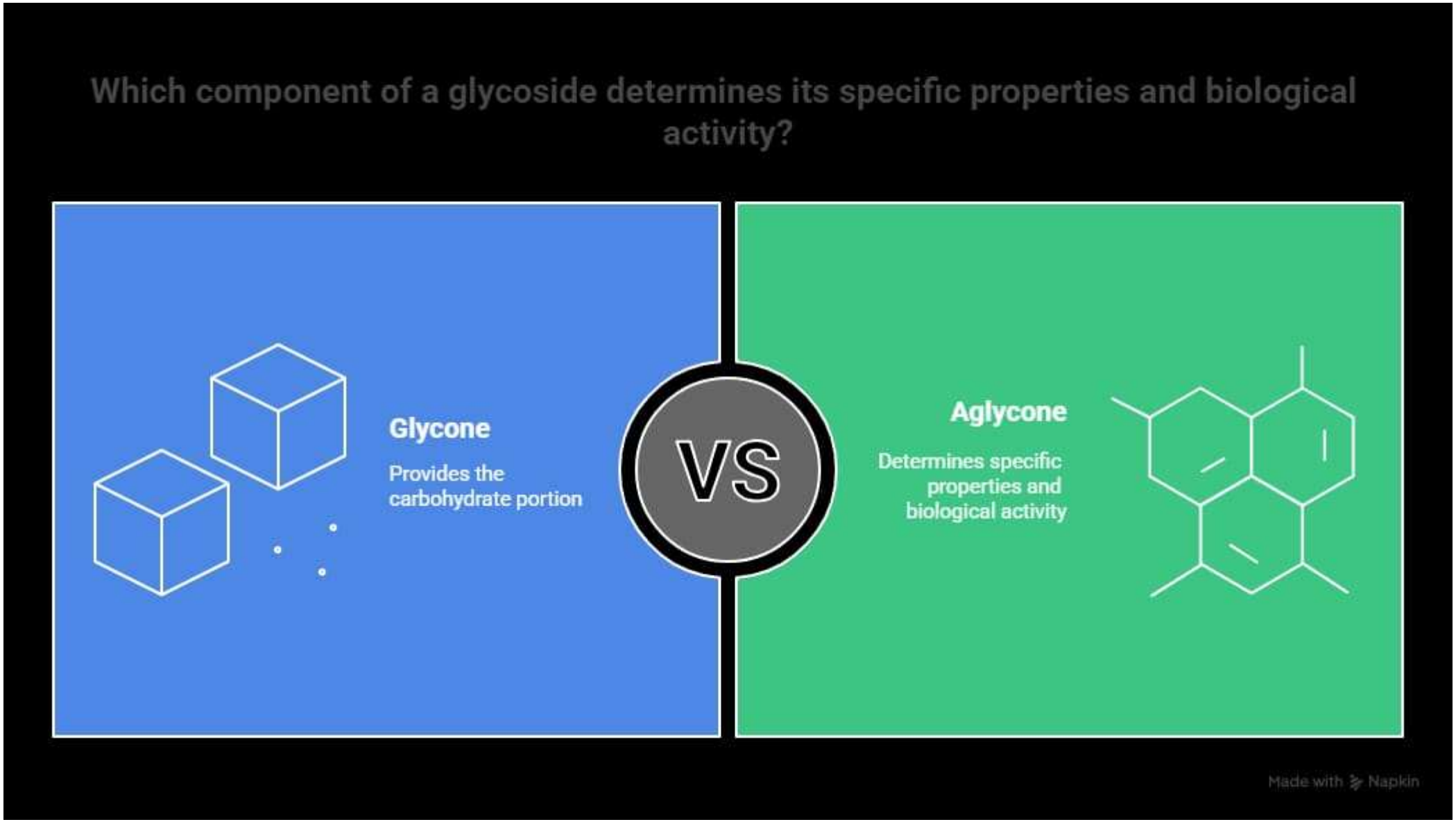

What are the properties of glycosides?
Solubility
Glycosides are more water-soluble than aglycones due to hydrophilic sugar moiety.
Stability
Glycosides are stable in neutral/alkaline conditions but hydrolyzed by acids/enzymes.
Optical Activity
Glycosides are optically active due to chiral centers.
Taste
Glycosides have characteristic tastes like sweetness or bitterness.
Biological Activity
Glycosides exhibit various biological activities like antimicrobial and anticancer properties.
Made with Napkin


Glycoside Structure and Importance
Aglycone
Non-sugar moiety in glycosides
Glycone
Sugar moiety in glycosides
Glycosidic Bond
Link between sugar and non-sugar moieties
Glycosides
Core compounds with glycosidic bond
Made with Napkin


Classification of Glycosides
Glucosides
Fructosides
Galactosides
Rhamnosides
Other Glycosides
Made with Napkin


Glycosidic Bond Formation
Aglycone
Glycone
Am
Anomeric Carbon
Glycosidic Bond
Made with Napkin

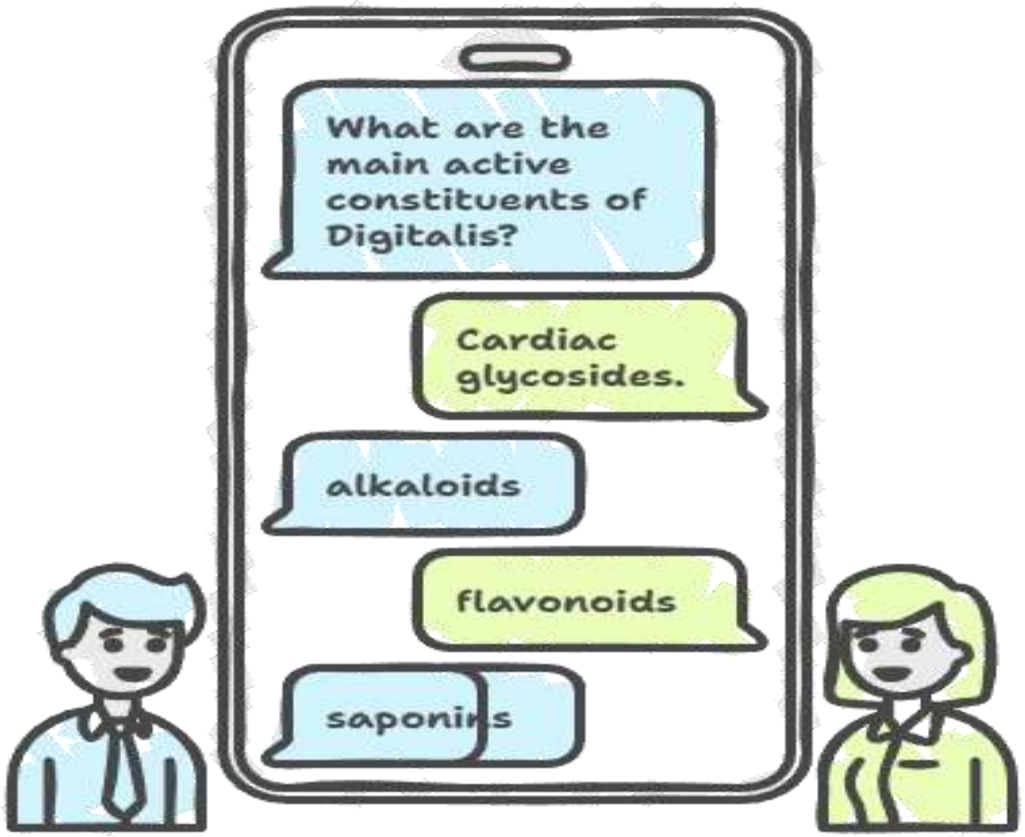

Types of Glycosidic Bonds
O-Glycosides
Most common, sugar-oxygen bond.
N-Glycosides
Sugar-nitrogen bond, found in nucleosides.
S
S-Glycosides
Sugar-sulfur bond, also known as thioglycosides.
C-Glycosides
Rare, sugar-carbon bond.
Glycosidic Bonds
Made with Napkin


Which component of a glycoside determines its specific properties and biological activity?
Glycone
Provides the carbohydrate portion
VS
Aglycone
Determines specific properties and biological activity
Made with Napkin

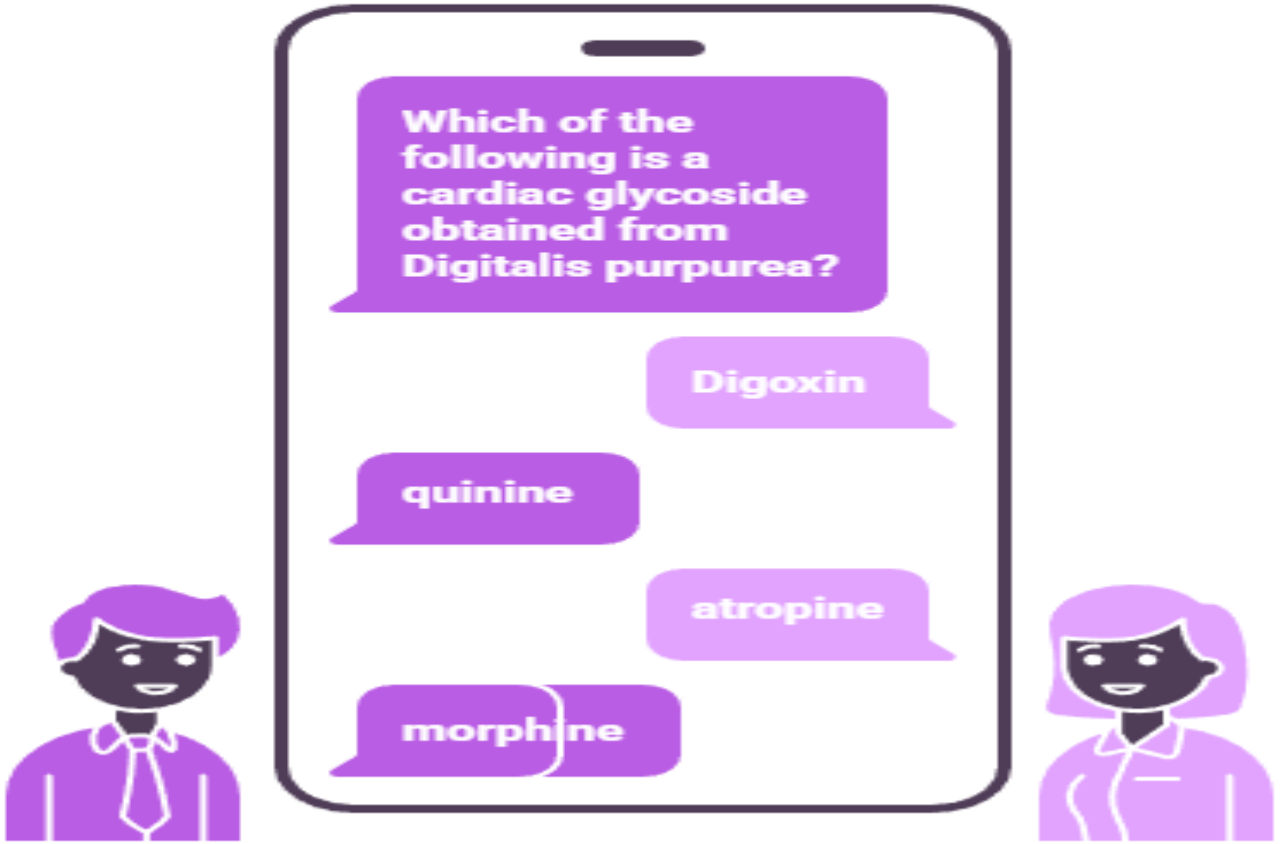
ASSESMENT

Digitalis Use

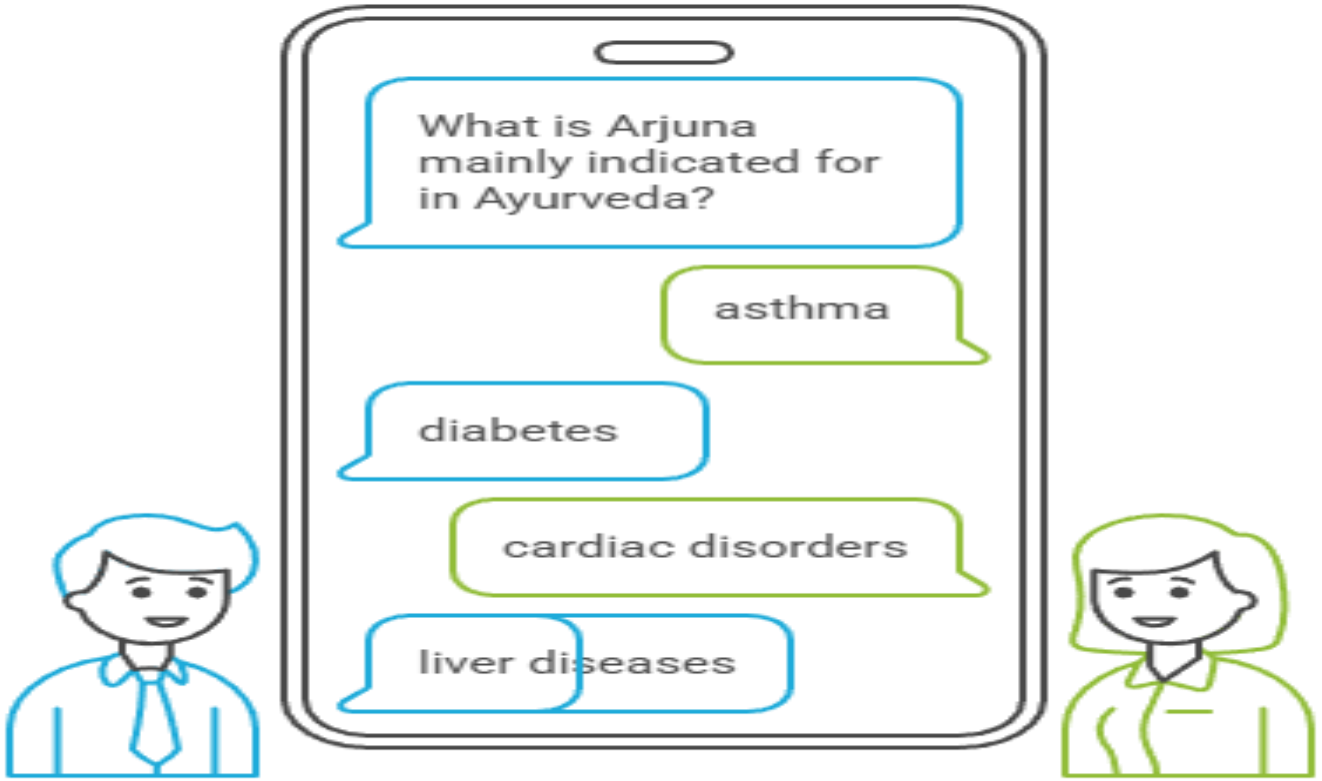
Active Constituents of Digitalis



Cardiac Glycosides from Digitalis purpurea



Arjuna's Ayurvedic Indications



Made with Napkin

REFERENCES

1. Kokate C.K., Purohit A.P., Gokhale S.B. – Pharmacognosy, Nirali Prakashan, India.

2. Trease G.E., Evans W.C. – Pharmacognosy, Elsevier Publication.

3. K.D. Tripathi – Essentials of Medical Pharmacology, Jaypee Brothers.

4. Sharma P.V. – Dravyaguna Vijnana, Chaukhambha Bharati Academy.

5. WHO Monographs on Selected Medicinal Plants, Vol. 1–4.

6. Indian Pharmacopoeia Commission – Indian Pharmacopoeia.


Thank You