



**AC PolyJackharides**

## 20963 AC PolyJackharides

Moisturizing + Hydrating + Smoothing

Product Code: 20963

INCI Name: Water & Artocarpus Heterophyllus Fruit Extract

INCI Status: Conforms

Suggested Use Levels: 1.0 – 10.0%

Suggested Applications: Moisturization, Hydration, Anti-Frizz

Solubility: Water Soluble



## 20963 AC PolyJackharides

### Jackfruit on the rise

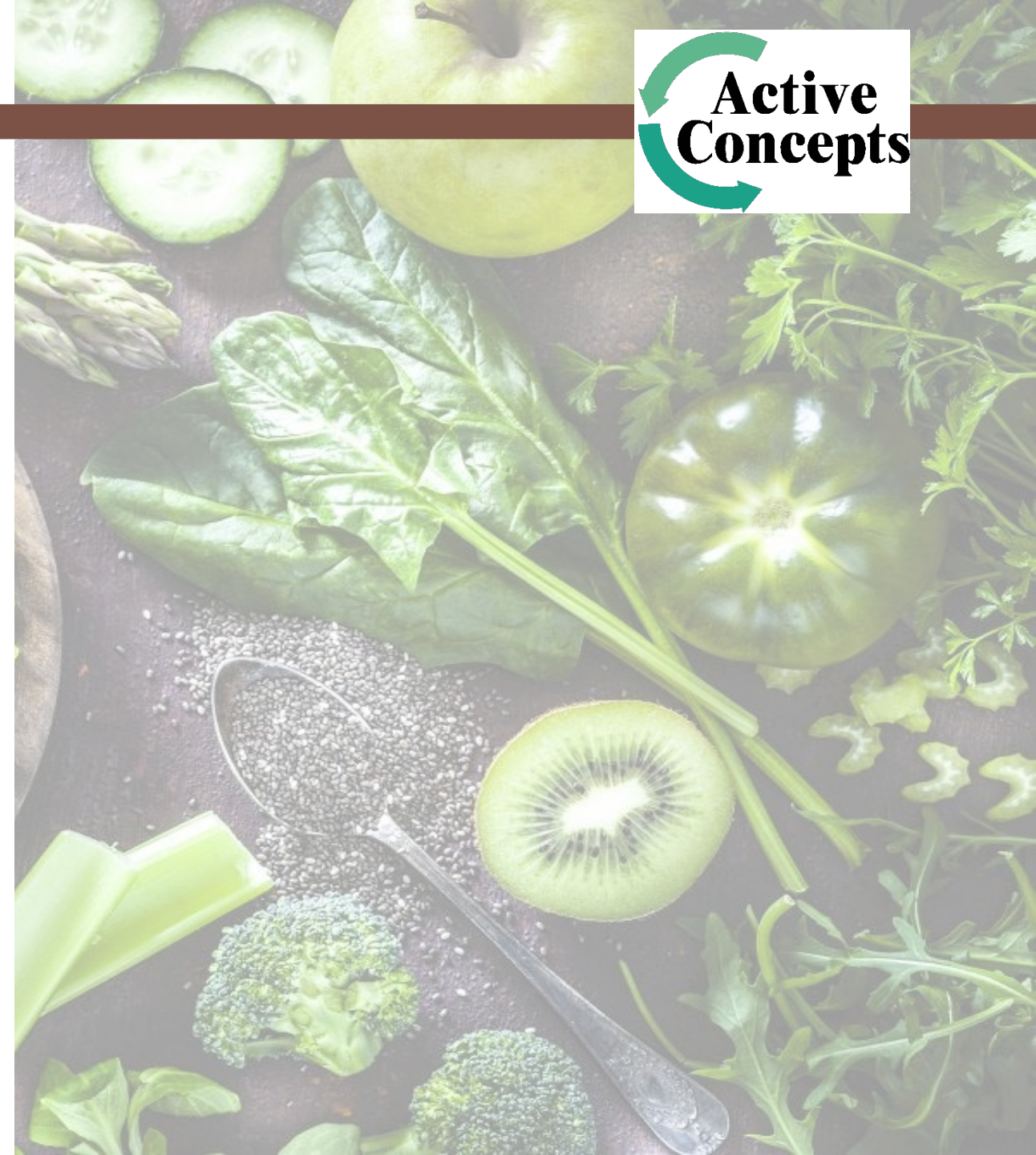
- Jackfruit, popular among **vegans** and **superfruit enthusiasts**, finds a new home in beauty for **sustainable** functionality
- Jackfruit is on the rise as a superfruit ingredient
  - Nutrient rich profile: protein, vitamin B, vitamin C, magnesium, potassium, and carbohydrates
- **AC PolyJackharides** - comprised of jackfruit polysaccharides extracted from upcycled food industry waste – circular economy
  - Circular economy = sustainability achieved when result of product development improves environment, well-being of the consumer, and economically mitigating negative impacts
- **AC PolyJackharides** is a functional cosmetic active - providing moisturization to the skin, as well as hydrating and anti-frizz benefits to the hair



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### This is just the veginning...

- Consumers are also pushing to move away from animal derived products
- Veganism is one of the leading global trends
  - Sustainability, animal welfare, and mindful living
- Healthy lifestyle = healthy planet
- In response to the movement, Active Concepts has developed **AC PolyJackharides**
  - A sustainable and vegan, functional active derived from jackfruit polysaccharides

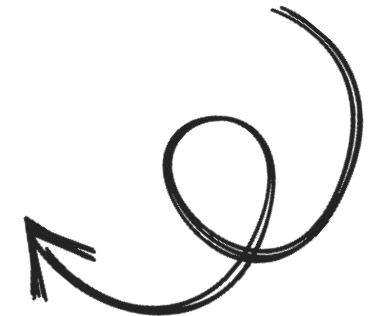


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### Move over, meat!

- The jackfruit is a tropical fruit cultivated in many tropical regions of the world, bearing the largest fruit of all trees
- Jackfruit is more recently becoming consumer recognizable as a popular vegan, meat alternative
- Most commonly found in cuisine, seeds and rags (finger-like projections between seeds of jackfruit) are a staple in the diet of many vegans
  - Cooked in same fashion as pulled pork and taco filling
- Edible parts of the fruit are utilized in the food industry & inedible parts comprise approximately 70-80%<sup>1</sup> of the jackfruit
  - Left as waste able to be repurposed – sustainable reaminated waste!

# JACKFRUIT IS A BIG DEAL



<sup>1</sup>Akter, F., and M. A. Haque. "Jackfruit Waste: a Promising Source of Food and Feed." Ann. Bangladesh Agric 23.1 (2019): 91-102.

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### The “green” scene

- The tree bearing jackfruit, the Jack Tree, is a sustainable perennial
  - Regenerating itself yearly and reducing the need for replanting
- Sustainability is a trending movement - awareness of social responsibility and environmental impact
- Consumers pushing for sustainable manufacturing in every industry
  - Active Concepts offering circular economy sourcing
- A unique sourcing origin makes for brand inspiration and the opportunity to cut down on one’s carbon footprint
- Active Concepts focuses their sustainability strategies on ensuring that all materials/processes are environmentally sound
  - **AC PolyJackharides** - reanimating discarded waste from the food industry through circular economy sustainability



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### Polysaccharides at work

- Jackfruit polysaccharides - allows formulator to capitalize on a superfruit, hero ingredient trending in the cosmetic market
  - Providing skin with essential moisturization/hair with hydrating and anti-frizz benefits
- Polysaccharides = long chain carbohydrates
  - Energy storage and providing structural support to cell wall membranes
  - Film-forming and hydration capacities, increasing the skin's natural ability for repair and renewal
- If skin's protective barrier becomes damaged or disrupted, natural polysaccharide concentration & transepidermal water is depleted
  - May result in scaly, dry skin, and the development of fine lines and wrinkles
- Film forming properties and adherence to skin and hair are essential to defend and protect from damage, promote healing and lasting moisturization/hydrating/anti-frizz benefits

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### Benefits

- Jackfruit - a popular superfruit among the vegan community
  - Highly praised for nutritional value and versatile presence in industries
- Capitalizing on sustainability and veganism, **AC PolyJackharides** offers upcycled, circular economy approach to clean and eco-conscious living
- Jackfruit polysaccharides extracted from inedible, discarded waste
- **AC PolyJackharides** is capable of increasing moisturization to the skin, as well as hydrating and anti-frizz benefits to the hair





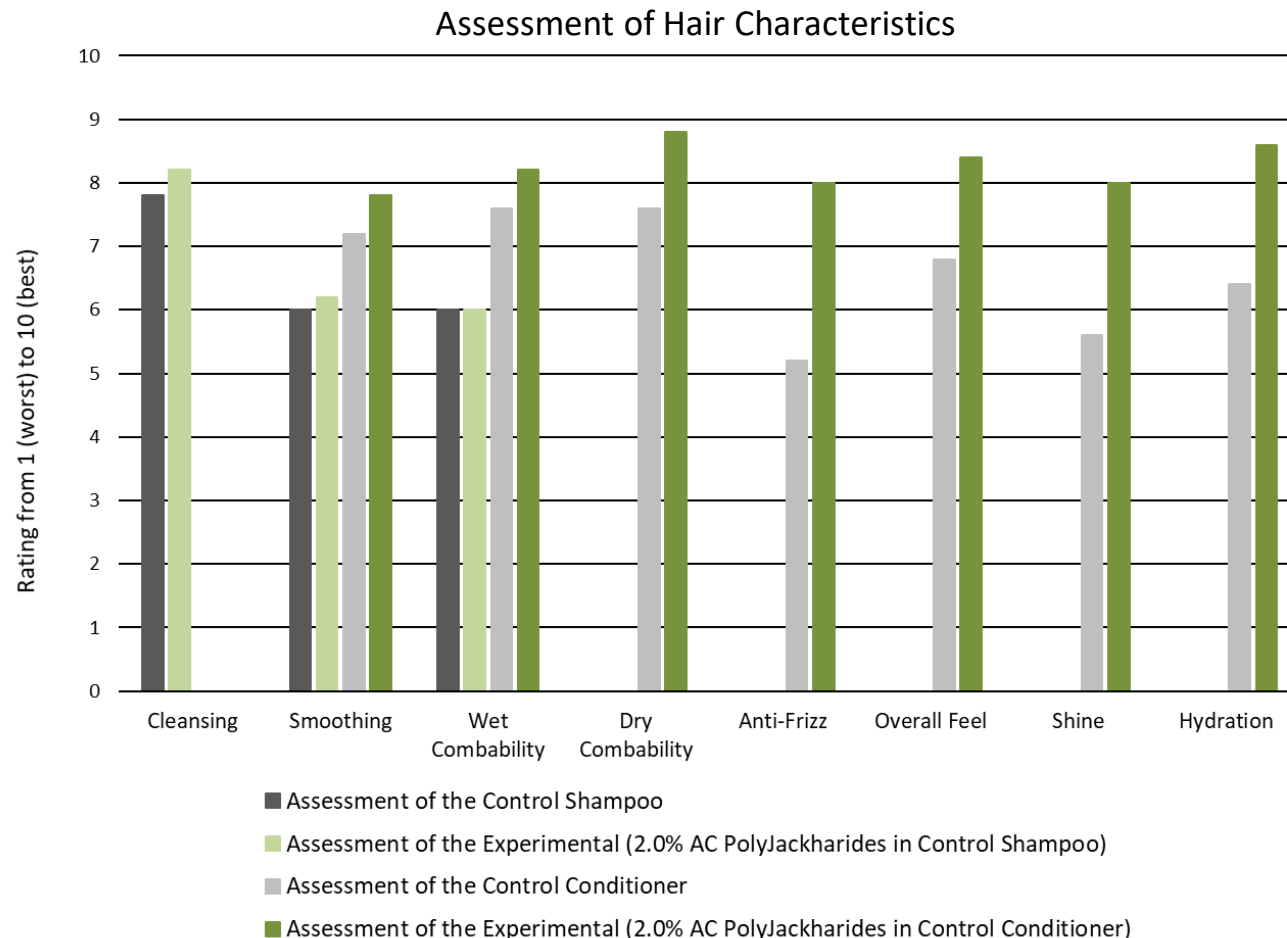
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### Available Efficacy

- ***In-vivo* Efficacy Studies**
  - Salon Half-Head Study
  - Rinse-off Moisturization Assay
- **Safety Information**
  - *in-vitro* Dermal and Ocular Irritation Tests
  - Bacterial Reverse Mutation Test
  - Phototoxicity Assay
  - OECD 442C Direct Peptide Reactivity Assay
  - OECD 442D TG *in-vitro* Skin Sensitization
  - OECD 201 Freshwater Alga Growth Inhibition Test
  - OECD 301B Ready Biogradability Assay
  - Allergen Statement

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## Salon Half-Head Study



Graph 1. Rating of hair characteristics following sensory assessment

### Protocol

- Study conducted to determine comparison of control shampoo vs. 2.0% **AC PolyJackharides** in shampoo as well as a comparison between control conditioner vs. 2.0% **AC PolyJackharides** in conditioner
- 5 volunteer participant's hair was photographed prior to treatment and again after shampoo, conditioner, and styling
- Half-head images were used in conjunction with sensory assessment subjectively rating parameters: cleansing, smoothing, dry and wet combability, anti-frizz, overall feel, shine, and hydration
- **AC PolyJackharides** is capable of enhancing hydration, anti-frizz, and overall feel

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## Salon Half-Head Study



Figure 1. Full Head Baseline, Untreated Hair

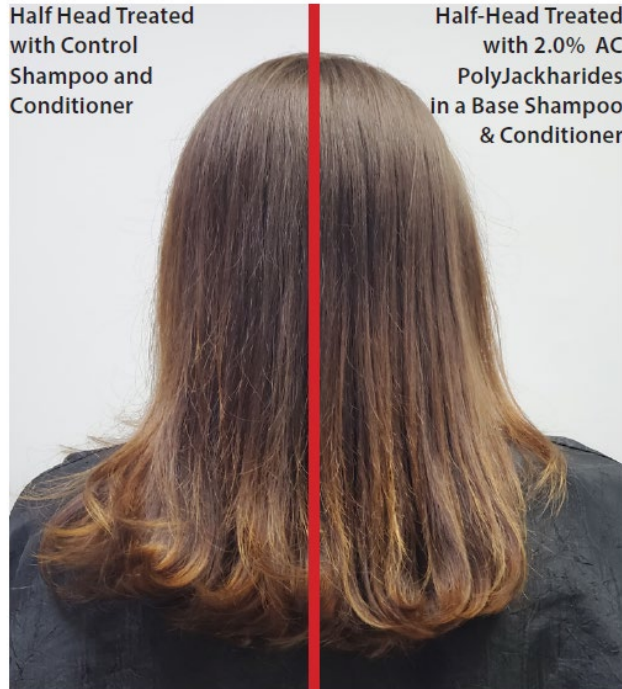


Figure 2. Half Head Treated



Figure 3. Full Head Baseline, Untreated Hair

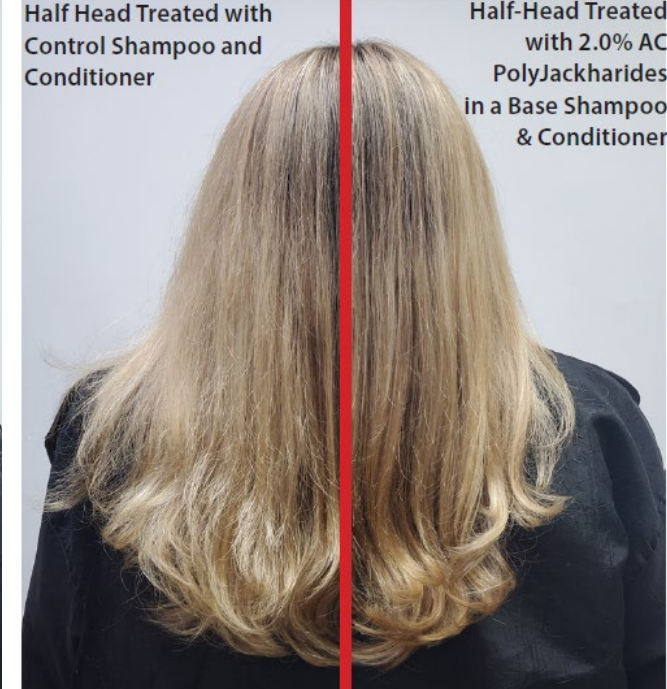
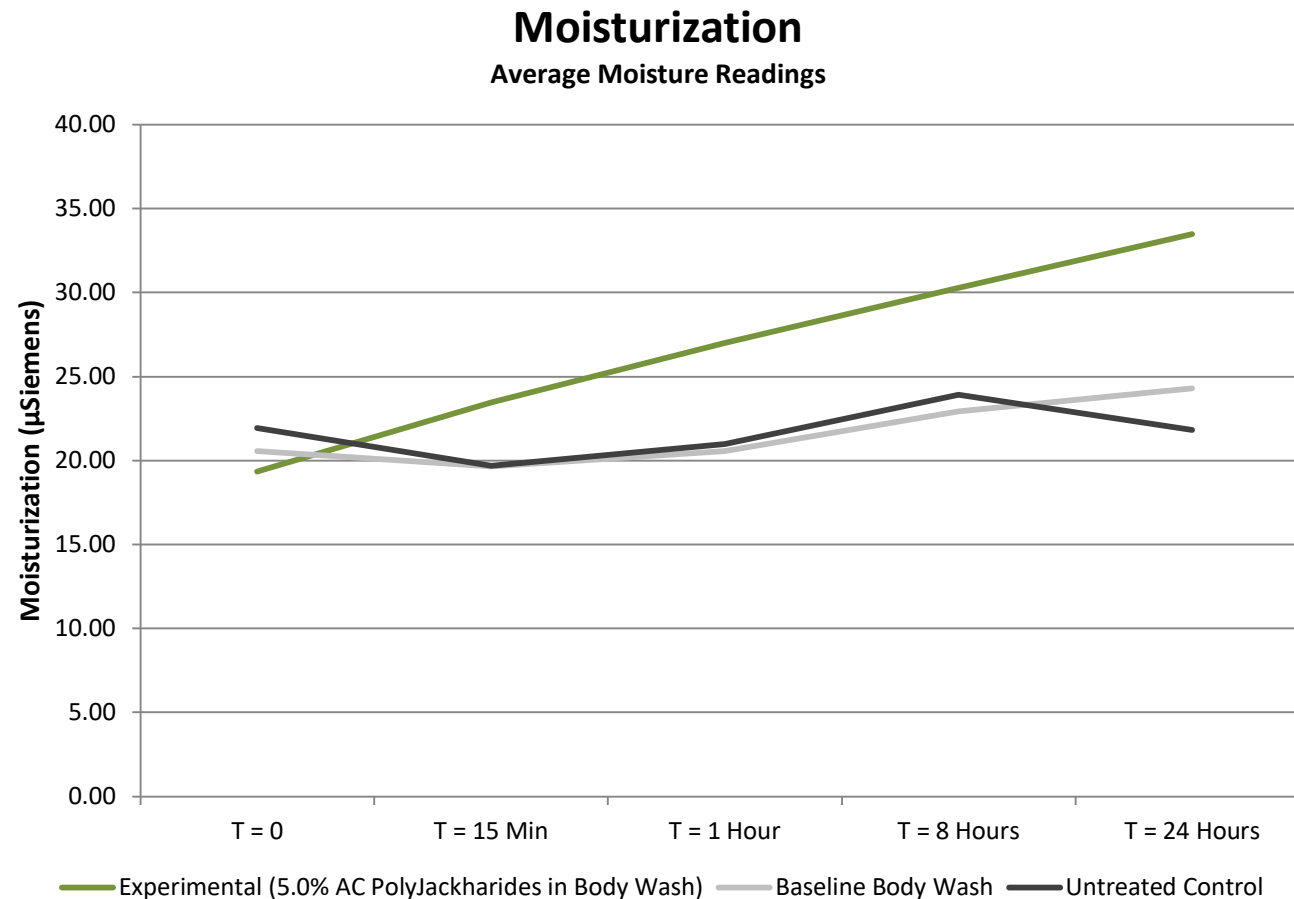


Figure 4. Half Head Treated

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## Rinse-off Moisturization Assay



### Protocol

- In-vivo study conducted over a period of three days to evaluate the moisturization benefits of 5% **AC PolyJackharides** in body wash formulation
- 10 M/F subjects between ages 23-45
- **AC PolyJackharides** showed high moisturizing capabilities at a 5.0% concentration after 15 minutes, 1 hour, 8 hours and 24 hours post application
- **AC PolyJackharides** is capable of significantly increasing moisturization compared to the control

Graph 2. Average Moisture Readings

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