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Formulation Design for Skin Hair and Oral-Care Concerns

Practical 23 - Case-based formulation practical

Aim

To develop separate formulation and evaluation plans for six skin, hair and oral-care concerns.

Principle

A development plan connects the intended product claim to a suitable base, ingredient compatibility, quality attributes and claim evidence. A cream, cleanser and toothpaste have different process and evaluation requirements; a visually acceptable base does not establish a therapeutic effect.

Materials and Requirements

- Six fictional product briefs and approved ingredient specifications
- Suitable cream, cleanser and oral-care base procedures
- Physical, analytical, microbial-quality and stability methods
- Approved method or teaching-data pack and a dated record sheet

Procedure

1. Define the preparation or dataset, study question and method version. Record identities, units and the criteria to be used before examining the outcome.
2. Define the intended cosmetic or medicinal claim and assess whether clinical or dental referral is relevant to the concern.
3. Choose a justified product type and ingredient role separately for each case; calculate a complete formula and identify compatible incorporation stages.
4. Use the appropriate approved base procedure for the selected model, recording quantities, order, temperature and mixing rather than applying a cream process to every product.
5. Assess physical quality, content/distribution where relevant, microbial controls, stability and packaging with methods matched to each product.
6. Prepare a claim-evidence plan and distinguish bench quality observations from clinical efficacy.
7. Retain the original observations and calculations. State deviations, missing information and the limits of the conclusion; do not replace measured values with expected results.

Observations and Record

Enter actual measurements or the supplied teaching data. Record the method, material identity, conditions and units.

Concern	Development concept	Quality focus	Evidence / referral
Dry skin	Moisturising cream or lotion	Humectant/base compatibility, pH and stability	Substantiate the moisturising claim
Acne	Suitable cleansing or authorised active-product concept	Tolerability, content and base compatibility	Review medicine/cosmetic claim status

Concern	Development concept	Quality focus	Evidence / referral
Blemish appearance	Defined cosmetic appearance endpoint	Colour, uniformity and stability	Controlled claim evaluation
Wrinkle appearance	Defined moisturising/appearance concept	Physical stability and endpoint consistency	Substantiate the intended claim
Bleeding gums	Oral-care development record	Oral-base quality and ingredient compatibility	Dental assessment; no treatment claim from base tests
Dandruff	Scalp cleanser or authorised active concept	Surfactant system, content and stability	Product-specific claim and regulatory evidence

Calculations

- Required supplied ingredient = target ingredient amount / specified potency fraction
- Formula total must equal the declared final mass or volume basis.

Worked Example

Illustrative analytical marker target 0.50 g from a preparation containing 80.0% marker requires 0.625 g supplied material. Rebalance the remaining formula to its declared total.
The example is a formulation calculation, not a recommended treatment ingredient or concentration.

Result and Interpretation

- Present six separate concept, formula, process and evaluation records with the evidence still needed for each claim.

Precautions

- Use only approved laboratory formulations and label them for evaluation.
- Do not infer treatment of acne, gingival bleeding or other disease from a base test.
- Check actual ingredient suitability and claim status for the intended route and market.

Viva Questions and Answers

Why use different product procedures?

The bases and intended routes have different structure and quality needs.

Does including an active establish efficacy?

The complete product and proposed claim need appropriate evidence.

Why refer bleeding gums?

An oral-care base study cannot diagnose or treat its underlying cause.

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