

Protein Bars

Nutrition bars are one of the fastest growing segments in sports and healthy lifestyle nutrition. This comes through the growth of traditional nutrition bars becoming more accessible and palatable for the everyday health conscious consumer. Nutrition bars most commonly come in the form of a high protein, low sugar (HiLo) dough bar, or a muesli bar.

This product concept card is designed to show how our ingredients can be used to create products with a range of benefits for you and your consumers.

Nutrition bars are typically produced through an extrusion process followed by cool setting. Typical ingredients are:

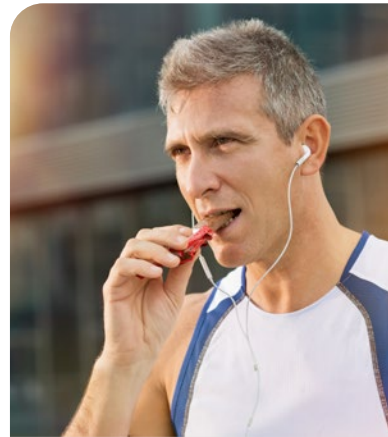
- Protein source - animal or plant-based protein
- Filler material - Glucose syrup, fat source, glycerin, muesli etc.
- Sweetener - Sugar alcohols, artificial sweeteners, glucose syrup
- Fibre - Inulin, GOS, FOS
- Coating - Chocolate or yoghurt
- Inclusions - Crisps, caramels, nuts etc.
- Typical protein content - 15-20 grams per bar

Univar Solutions recommends: **WPC 515** [75%], **MPC 4861** [25%]

USP	BENEFITS	CHALLENGES
This combination of functional WPC and functional MPC provides the best performance for overall taste and texture	Best protein combination to produce a soft and cohesive bar that is stable across the shelf life	The combination of protein ingredients should be tailored to desired taste and texture.

Method

1. Mix the Isomalto-oligosaccharides, almond butter, and glycerin into a saucepan and heat on a hot plate at a temperature of 50°C until melted and combined
2. Mix the protein powders and flavour/sweetener together in a separate bowl
3. Add the dry and wet mixes together and mix until homogenous, scraping down the sides of the bowl as needed
4. Add the protein crisps and mix for a further 30s until well combined
5. Pour the dough into a square frame, cover with plastic film and roll into shape to fit the frame
6. Leave the dough to set overnight at ambient temperature
7. Cut the dough into bars of the desired shape and size
8. Enrobe the bars with yoghurt or chocolate if desired
9. Package the bars in sealed, foil packets



Basic recipe

INGREDIENTS	%
WPC 515	20
MPC 4861	12
Isomalto-oligosaccharides	20
Almond Butter	20
Glycerin	18
Whey Protein Crisps	10
Flavour & Sweetener	As req'd

PROTEIN BARS	
Nutrition facts	
Amount per 60g bar	
Energy Value (kJ/ kcal)	920 / 220
Total Fat	9g
Total Carbohydrates	24g
Total sugars	1g
Protein	18g

Alternative ingredients

PRODUCT	USP	BENEFITS	CHALLENGES
Calcium Caseinate 380	<ul style="list-style-type: none"> More inert protein source that is very high in protein and low in lactose 	<ul style="list-style-type: none"> High in protein and low in lactose Easy to process Reduces chewiness Works well when combined with a whey protein High in calcium 	<ul style="list-style-type: none"> Can create a chalky mouthfeel Can create a crumbly texture 'Soapy' flavour can be a challenge in high addition rates
MPC 4861	<ul style="list-style-type: none"> A texture building ingredient which creates a more firm bar without being crumbly 	<ul style="list-style-type: none"> Build texture without crumbling Clean flavour Works well in combination with a more chewy or inert protein source 	<ul style="list-style-type: none"> Can become too firm if used in high addition rates Can create a 'soapy' flavour if used in high addition rates
WPC 515	<ul style="list-style-type: none"> Advanced functional ingredient which permits high protein levels in a great tasting, soft protein bar 	<ul style="list-style-type: none"> Best single protein ingredient base Hardens less across the shelf life Clean flavour Reduced chewiness 	<ul style="list-style-type: none"> The main challenge is cost if this is used as the only protein ingredient
WPC 392	<ul style="list-style-type: none"> Complete protein source that can be used to create chewy or whipped textures 	<ul style="list-style-type: none"> Clean flavour More cost effective Can be whipped to create a nougat consistency 	<ul style="list-style-type: none"> Cohesive texture Chewy mouthfeel Hardens across the shelflife
WPI 895	<ul style="list-style-type: none"> Very high in protein with highest leucine levels of all dairy ingredients. Requires less to achieve the target protein content. 	<ul style="list-style-type: none"> Creates a cohesive bar with a satisfying chew Very high in BCAA specifically leucine Clean flavour 	<ul style="list-style-type: none"> Hardens across the shelflife Cost and texture can become a challenge in high addition rates
WPH 911 & WPH 917	<ul style="list-style-type: none"> A very soft bar ingredient made of hydrolysed whey protein 	<ul style="list-style-type: none"> Bar softener Hardens less than the standard WPC 80 across shelf life 	<ul style="list-style-type: none"> More expensive ingredient Bitter taste limits addition rate
Galacto-oligosaccharide	<ul style="list-style-type: none"> Dairy-based fibre source which creates less bloating with a great taste 	<ul style="list-style-type: none"> High in fibre Prebiotic fibres that create less bloating Binding agent for cereal bars Sweet flavour 	<ul style="list-style-type: none"> Addition rate is limited due to laxative effect More expensive than alternative fibre sources



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