

## Bacto™ Proteose Peptone

## BiTek™ Proteose Peptone

## Bacto™ Proteose Peptone No. 2

## Bacto™ Proteose Peptone No. 3

## BiTek™ Proteose Peptone No. 3

## Bacto™ Proteose Peptone No. 4

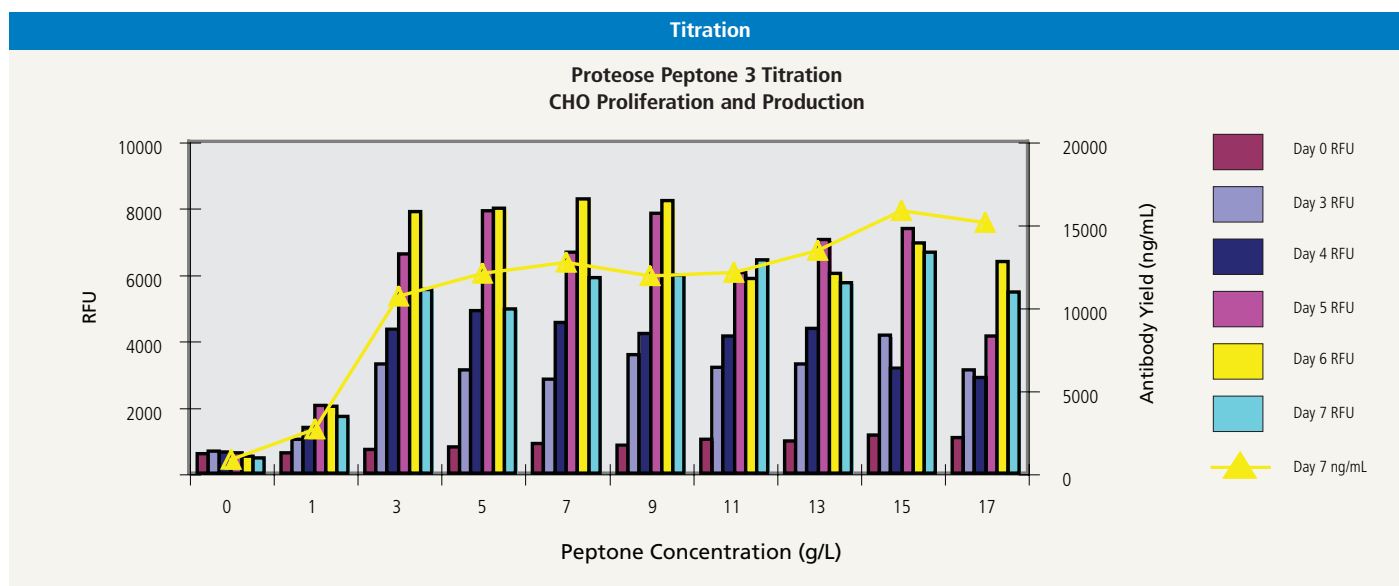
### Product Description

The Bacto™ Proteose Peptones are enzymatic digests of protein. Studies of peptic digests of animal tissue prepared under varying digestion parameters led to the development of Proteose Peptone, Proteose Peptone No. 2 and Proteose Peptone No. 3. Data accumulated during these studies demonstrated that no one peptone is the most suitable nitrogen source for every microbiological application. Bacto Proteose Peptone No. 4 is a spray-dried version of Bacto Proteose Peptone.

BiTek™ Proteose Peptone and BiTek Proteose Peptone No. 3 are enzymatic digests of protein, developed to offer alternatives to the Bacto Proteose Peptones for scale-up to production applications.

### Potential Applications

**Bacto Proteose Peptone** is used in preparing microbiological culture media and in producing bacterial toxins. Bacto Proteose Peptone was originally developed to produce a diphtheria toxin of high and uniform potency from cultures of *Corynebacterium diphtheriae*. Studies support the use of Proteose Peptone for production of diphtheria toxin, toxin-antitoxin mixtures and toxoid.<sup>1,2</sup> Proteose Peptone is also valuable in the production of other bacterial toxins: *Clostridium botulinum* toxin;<sup>3</sup> toxin from *Clostridium perfringens*;<sup>4</sup> toxin of hemolytic streptococci;<sup>5</sup> pneumococcus toxin;<sup>6</sup> and toxin from *Salmonella pullorum* (*Salmonella choleraesuis* subsp. *choleraesuis*).<sup>7</sup>



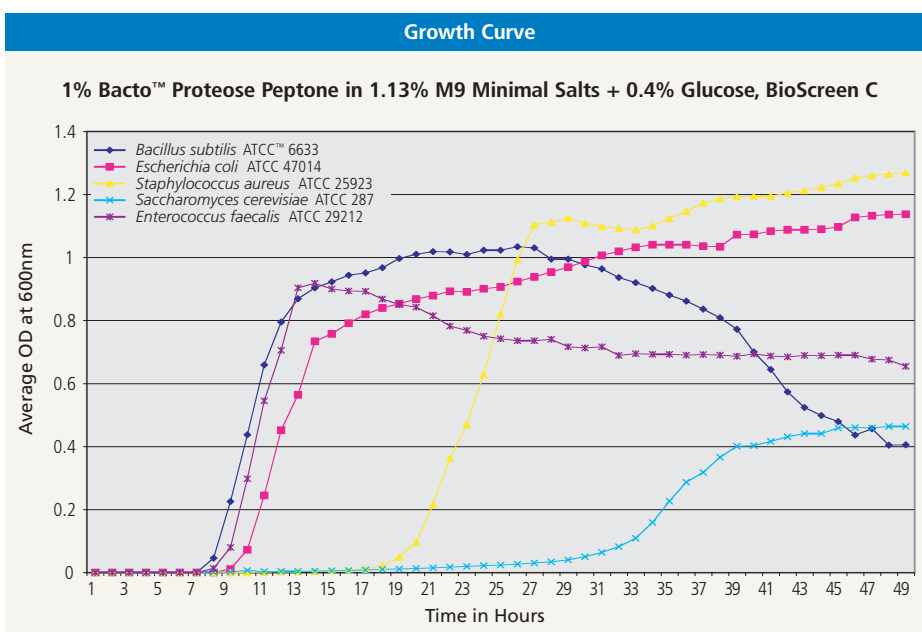
Many factors account for the suitability of Proteose Peptone for the culture of fastidious pathogens, including the nitrogen components, buffering range and the high content of proteoses. These elements create an environment beneficial to the maintenance of virulence and the elaboration of bacterial by-products, thus stock cultures are well preserved on media containing Bacto Proteose Peptone.

**Bacto™ Proteose Peptone** may be used in culture medium for a variety of applications, including production of substances from the culture of bacteria, fungi and mammalian cells. Proteose Peptone has been utilized in a medium for producing glycosidases from *Bacteroides fragilis*,<sup>8</sup> and to stimulate amyloglucosidase production by *Aspergillus* sp.<sup>9</sup> It has been used to cultivate halophilic bacteria isolated from soil in Egypt for production of polymers.<sup>10</sup> Jan et al.<sup>11</sup> reported that Proteose Peptone as supplementation to defined medium resulted in significant increases in cell number and specific monoclonal antibody production in batch culture system. Proteose Peptone has also been used to provide nutrients for axenic culture of amoeba.<sup>12</sup>

**BiTek™ Proteose Peptone** was developed to provide an alternative product to Bacto Peptone with growth characteristics similar to Bacto Proteose Peptone.

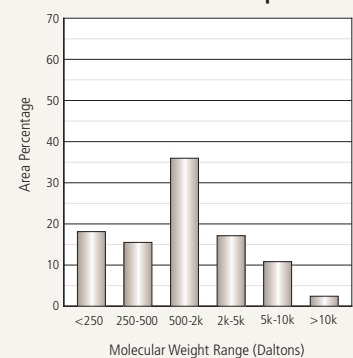
**Bacto™ Proteose Peptone No. 2** is used in preparing microbiological culture media. It was originally developed for use in media for the production of diphtheria toxin. Bunney and Thomas<sup>13</sup> reported good yield of diphtheria toxin with Proteose Peptone No. 2 in a simple peptone-sugar-sodium acetate medium.

**Bacto™ Proteose Peptone No. 3** is used in preparing microbiological culture media. It is a modification of Proteose Peptone adapted for use in the preparation of chocolate agar for propagation of *Neisseria* species and chocolate tellurite agar for *Corynebacterium diphtheriae*. While investigating the nutritional values of the Proteose Peptones, Difco Laboratories found that Proteose Peptone No. 3 provides superior nutrition for fastidious microorganisms. It supports growth of streptococci, staphylococci, pneumococci, gonococci and other organisms that require a highly nutritious substrate. For example, Ifediba and Vanderberg<sup>14</sup>



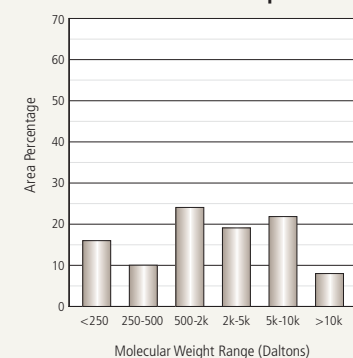
#### Molecular Weight

##### BiTek™ Proteose Peptone



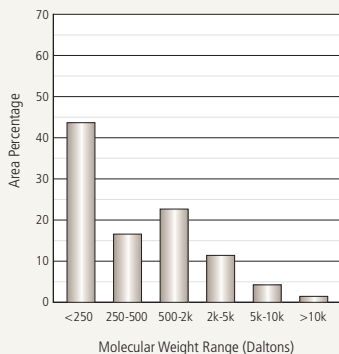
#### Molecular Weight

##### Bacto™ Proteose Peptone



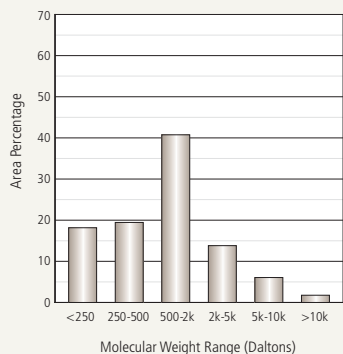
Molecular Weight

Bacto™ Proteose Peptone No. 2



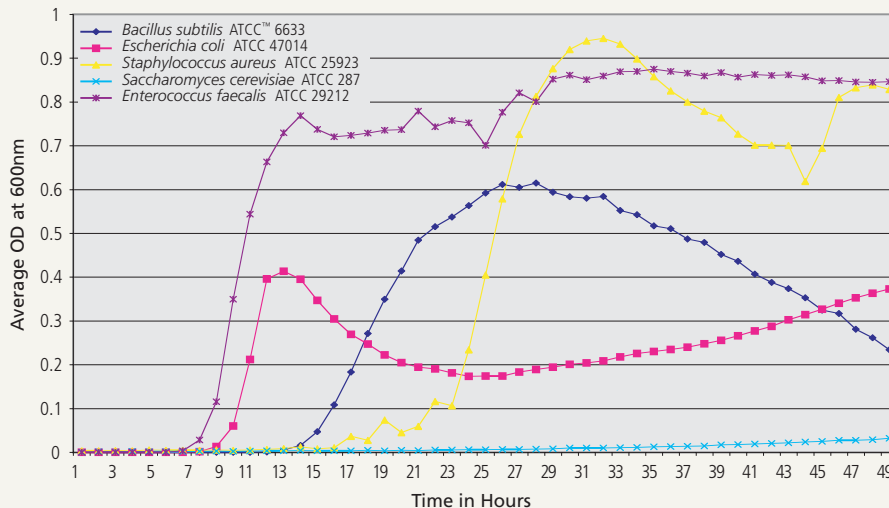
Molecular Weight

BiTek™ Proteose Peptone No. 3



Growth Curve

1% Bacto™ Proteose Peptone No. 2 in 1.13% M9 Minimal Salts + 0.4% Glucose, BioScreen C



report that Proteose Peptone No. 3 in addition to calf serum was used as an inexpensive replacement for human serum in cultivation of *Plasmodium falciparum*, the causative agent of human malaria. Cell culture manufacturers have found significant yield improvements in using Proteose Peptone No. 3.

BiTek™ Proteose Peptone No. 3 was developed to provide an alternative product to Bacto Proteose Peptone No. 3 with growth characteristics similar to Bacto Proteose Peptone No. 3.

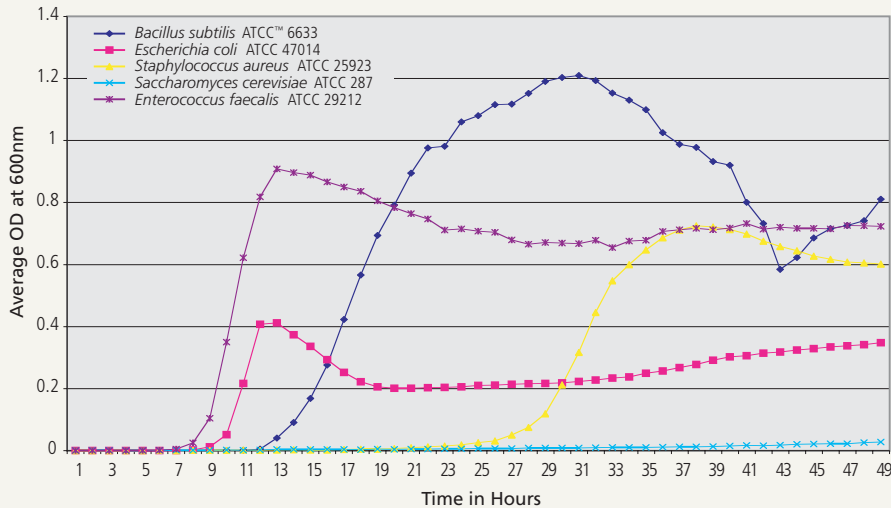
Bacto™ Proteose Peptone No. 4 is a spray-dried version of Bacto Proteose Peptone. It offers the same beneficial nutrients as Proteose Peptone for growth promotion and toxin production with a wide range of fastidious microorganisms.

Availability

Product Description	Cat. No.	Qty.
Bacto™ Proteose Peptone	211684	500 g
Bacto™ Proteose Peptone	212010	10 kg
BiTek™ Proteose Peptone	253310	10 kg
Bacto™ Proteose Peptone No. 2	212120	500 g
Bacto™ Proteose Peptone No. 2	212110	10 kg
Bacto™ Proteose Peptone No. 3	211693	500 g
Bacto™ Proteose Peptone No. 3	212220	2 kg
Bacto™ Proteose Peptone No. 3	212230	10 kg
Bacto™ Proteose Peptone No. 3	211692	50 kg
BiTek™ Proteose Peptone No. 3	253720	25 kg
Bacto™ Proteose Peptone No. 4	211715	10 kg

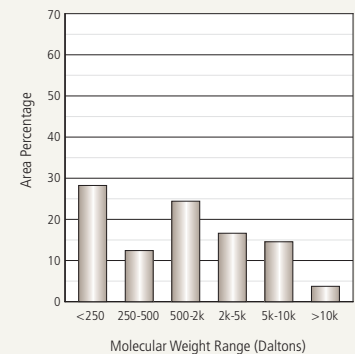
## Growth Curve

1% Bacto™ Proteose Peptone No. 3 in 1.13% M9 Minimal Salts + 0.4% Glucose, BioScreen C



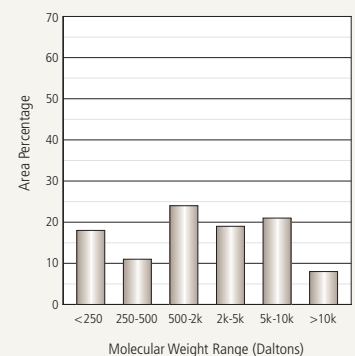
## Molecular Weight

Bacto™ Proteose Peptone No. 3



## Molecular Weight

Bacto™ Proteose Peptone No. 4



## Physical Characteristics

Bacto™ Proteose Peptone appears as tan, free-flowing granules.

BiTek™ Proteose Peptone is a tan, free-flowing, homogeneous powder.

Bacto™ Proteose Peptone No. 2 appears as tan, free-flowing granules.

Bacto™ Proteose Peptone No. 3 appears as golden tan, free-flowing granules.

BiTek™ Proteose Peptone No. 3 is a light beige, free-flowing, homogeneous powder.

Bacto™ Proteose Peptone No. 4 is a light beige, free-flowing, homogeneous powder.

## References

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