



Recombinant Bovine Growth Hormone (rBGH) in Milk

What are the health concerns for humans?

Bovine growth hormone is a natural form of the bovine somatotropin that promotes growth and cell replication [1]. Recombinant bovine growth hormone (rBGH) is the synthetic form that is injected into cows to increase milk production [2]. This hormone, both the natural and synthetic forms, stimulates milk production in mammals by increasing the production of insulin-like growth factor-1 (IGF-1) [2]. Since higher IGF-1 level is associated with increased cancer risks in humans, especially breast cancer risk [4], critics have feared that drinking milk from cows treated with rBGH may increase cancer risk [2].

In fact, there is no significant difference in bovine growth hormone levels in milk from rBGH-treated and untreated cows [1]. Even if there were a much higher level of bovine growth hormone ingested by humans, our digestive system would break down and inactivate the hormone protein [1]. In addition, the bovine growth hormone does not affect human growth hormone receptors [1].

Milk from cows treated with rBGH has a slightly higher concentration of IGF-1 than milk from untreated cows [5]; however, the variability of IGF-1 levels in milk may also be due to natural factors [6]. IGF-1 in milk is not altered by pasteurization or homogenization [7]. The extent to which IGF-1 is absorbed by humans is still unknown [3]. One study estimated that the human exposure to IGF-1 from drinking milk from rBGH-treated cows is only 0.09% of the normal daily production of IGF-1 in humans [2]. Thus, there is little evidence to suggest that rBGH influences cancer risk.

Despite disapproval from some groups such as the Physicians for Social Responsibility (PSR), the Food and Drug Administration (FDA) approved the injection of rBGH in cows for higher milk production in 1993 [3]. However, consumer demand for milk from rBGH-treated cows has decreased in recent years in the United States [3]. A 2007 survey conducted by the United States Department of Agriculture (USDA) found that only 17% of cows were being treated with rBGH [2].

References:

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Questions Regarding rBGH in Milk

1. Does milk from cows treated with rBGH have a higher concentration of rBGH than milk from untreated cows?
2. Is IGF-1 level in milk from cows treated with rBGH higher than in milk from untreated cows? If so, how much higher?
3. Does drinking milk from cows treated with rBGH increase the risk of cancer?

