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Exploration of rice protein hydrolysates and peptides with special reference to antioxidant potential: Computational derived approaches for bio-activity determination

Sapna Rani, Km Pooja, Gaurav Kumar Pal

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1 **Abstract**

2 **Background**

3 Rice processing by-products derived proteins have been well acknowledged as rich
4 sources of structurally diverse compounds (especially proteins) possess various health-related
5 benefits along with a great therapeutic potential for the treatment and prevention of various
6 diseases.

7 **Scope and approach**

8 In this paper, we have reviewed and explored the possibilities for adapting the
9 sustainable valorisation of rice processing by-products to generate bioactive hydrolysates and
10 peptides for food and biotechnological industries. The role of computational derived
11 approaches for the production and applications of bioactive hydrolysates and peptides from
12 the parent protein has also been explored.

13 **Key findings and conclusions**

14 Based on the emerging evidence of potential health benefits, the antioxidant potential
15 of rice protein hydrolysate and peptides has been reviewed. The present review mainly
16 highlights the recent research on rice proteins derived bioactive compounds for food and
17 biotechnological applications using computational derived approaches with special reference
18 to antioxidant activity. The safety, bioavailability and technological problems (towards the
19 incorporation into food products) to deliver the bioactive peptides on the specific target has
20 been discussed. The major opportunities and challenges are discussed for inspiring
21 researchers/industries to investigate the critical problems that are responsible for preventing
22 the utilization of these approaches for the development of functional food and nutraceutical
23 products.

24 **Keywords:** Rice processing by-products; protein hydrolysates; computational approaches;
25 bioactive rice peptides; functional food products

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