

■ 依頼原稿

Modern human diet consists of a wide variety of food materials from different sources. The active promotion of fruits and vegetables as important part of a healthy diet has lead to significant increase in fresh produce being eaten all over the world. Recent outbreaks of foodborne illness related to consuming fresh produce has heightened concerns that these foods maybe an increasing source of illness. The minimalprocessing required for fresh and freshly cut produce which omits any effective microbial elimination step results in food products naturally carrying microorganisms, some of which may aybe potentially hazardous to the human health.

Some of the foodborne pathogens like *Salmonella* spp., *E.coli*, *Citrobacter* spp. and *Enterobacter* spp. produce curliwhich help in the initial steps of biofilm formation and enhances the resistance of cells in biofilms for sanitizers and disinfectants. Curli are proteinaceous components of a complex extracellular matrix and are produced by many *Enterobacteriaceae*. They are thin, coiled fibers expressed at surface of cells that bind several matrix and plasma proteins such as fibronectin, laminin, plasminogen and azo dyes like Congo red. Raw vegetables, fruits and unpasteurized juices contain a number of curli producing foodborne pathogens which are associated with food related diseases. These curli producers form biofilms on fresh produce as well as on food contact surfaces and result in cross contamination of produce. Curli producing bacterial strains are characterized by their ability to bind Congo red which provides a simple screening method *in vitro* curli production. The Congo red binding technique has a qualitative as well as a quantitative approach. Curli producers were isolated from fresh produce and unpasteurized carrot juice using modified Luria Bertani medium. Curli producing organisms form dry red rough colonies on modified LB medium, while nonproducers form smooth white colonies.. The parameters that control curli production such as temperature and osmolarity were evaluated using the Congo red binding technique. The ressitance of biofilms formed by curli producing organism was evaluated and found that curli production increases resistance to various commercially used sanitizers.

## ■ シングルチェック (スピード英文校正)

<sup>1</sup> The ~~Modern~~ modern human diet ~~consists of~~ <sup>2</sup> ~~contains~~ a wide variety of food ~~materials~~ from different sources. ~~The a~~ Active promotion of fruits and vegetables as <sup>3</sup> ~~an~~ important part of a healthy diet has <sup>4</sup> ~~lead~~ to a significant increase in the consumption of fresh produce <sup>5</sup> ~~being eaten all over~~ worldwide. Recent outbreaks of foodborne illness ~~related~~ <sup>6</sup> ~~te~~ associated with consuming fresh produce ~~has~~ <sup>7</sup> ~~have~~ heightened the concerns about that these foods ~~maybe~~ <sup>8</sup> ~~being~~ an increasing source of illness. The ~~minimal~~ minimum processing required for fresh and freshly cut produce, <sup>9</sup> ~~which omits~~ without any effective microbial elimination step, results in food products naturally carrying microorganisms, some of which may be potentially hazardous to ~~the~~ human health.

Some of the foodborne pathogens <sup>10</sup> ~~such as~~ like *Salmonella* spp., *Escherichia coli*, *Citrobacter* spp., and *Enterobacter* spp. produce curli, which help in the initial steps of biofilm formation and enhance the resistance of biofilm cells ~~in biofilms~~ <sup>11</sup> ~~for~~ to sanitizers and disinfectants. Curli are proteinaceous components of a complex extracellular matrix and are produced by <sup>12</sup> ~~many~~ several *Enterobacteriaceae*. They are thin, coiled fibers expressed ~~at on the~~ surface of cells that bind to several matrix and plasma proteins, such as fibronectin, laminin, plasminogen, and azo dyes ~~like~~ <sup>13</sup> ~~such as~~ Congo red. Raw vegetables, and fruits and unpasteurized juices contain <sup>14</sup> ~~a number of~~ several curli-curli-producing foodborne pathogens, <sup>15</sup> ~~which~~ are associated with food-food-related diseases. These curli producers form biofilms on fresh produce as well as on food contact surfaces, <sup>16</sup> ~~resulting in~~ and result in ~~cross-cross~~-contamination of produce. ~~Curli-Curli~~-producing bacterial strains are characterized by their ability to bind Congo red, which provides a simple screening method ~~for~~ <sup>17</sup> ~~in vitro~~ curli production. The Congo red binding technique has a qualitative as well as a quantitative approach. Curli-producing organisms ~~producers~~ were isolated from fresh produce and unpasteurized carrot juice using modified ~~Luria-~~ Bertani medium. ~~Curli-These~~ <sup>18</sup> ~~producing~~ organisms formed dry, red, rough colonies on modified LB medium, while nonproducers formed smooth, <sup>19</sup> ~~white~~ colonies. ~~The~~ <sup>20</sup> ~~parameters that control curli production~~ such as temperature and osmolarity ~~that control~~ <sup>21</sup> ~~curli production~~ were evaluated using the Congo red binding technique. The ~~resistance~~ of biofilms formed by curli-producing organisms was evaluated and it was found that curli production increases resistance to various commercially used sanitizers.

- ① **Grammar:** "Diet" is a countable noun and usually takes an article.
- ② **Language:** The term "food" in itself conveys the appropriate meaning and need not be supported by the term "material."
- ③ **Grammar:** "Part" is a countable noun and hence requires a determiner.
- ④ **Grammar:** Here, the verb form has been corrected.
- ⑤ **Language:** The word choice has been improved for conciseness.
- ⑥ **Grammar:** Because the subject "outbreaks" is plural, the verb should also be plural for correct subject-verb agreement.
- ⑦ **Typographical error:** The spelling error has been corrected.
- ⑧ **Language:** The clause has been revised for conciseness.
- ⑨ **Grammar:** "Such as" is the grammatically correct expression.
- ⑩ **Subject area:** Gene names are spelled out completely at their first mention in the manuscript.
- ⑪ **Style:** In American English, a comma is placed before "and/or" in lists.
- ⑫ **Grammar:** Preposition has been corrected.
- ⑬ **Language:** "Several" is preferred over "many" according to the standard academic convention.
- ⑭ **Language:** Wordiness is replaced with a more direct and accurate term.
- ⑮ **Grammar:** Usually "which" is preceded by a comma in nonrestrictive clauses.
- ⑯ **Punctuation:** Compound adjectives are usually hyphenated.
- ⑰ **Journal formatting:** As per the journal guidelines, latin words should be italicized.
- ⑱ **Language:** This term is usually hyphenated.
- ⑲ **Punctuation:** Coordinate adjectives are separated by commas.
- ⑳ **Language:** The sentence structure has been improved for enhanced flow of information.
- ㉑ **Typographical error:** The spelling error has been corrected.

## ■ダブルチェック（クオリティ英文校正）

1 The Modern human diet includes ~~consists of a wide variety of~~ food materials from a wide variety of ~~different~~ sources. 2 The Active promotion of fruits and vegetables as an important part of a healthy diet has ~~lead to~~ caused a significant increase in fresh produce consumption worldwide ~~being eaten all over the world~~. 3 However, ~~Recent~~ recent outbreaks of foodborne illness related to ~~associated with consuming~~ fresh produce consumption has ~~have~~ indicated a role of ~~heighted concerns that~~ these foods ~~maybe~~ as an increasing source of illness. [Remark 1] The ~~minimal~~ minimum processing required for fresh and freshly cut produce ~~which omits~~ does not include any effective microbial elimination step and results in food products naturally carrying microorganisms, some of which ~~may~~ may be potentially hazardous to the human health. 4 5 ~~Some of the~~ Certain foodborne pathogens such as ~~like~~ *Salmonella* spp., *Escherichia coli*, *Citrobacter* spp., and *Enterobacter* spp. 6 7 mainly members of Enterobacteriaceae, produce curli fibers ~~which that~~ help in the initial ~~steps~~ stages of biofilm formation and enhances the resistance of biofilm cells in biofilms ~~for to~~ sanitizers and disinfectants. Curli are proteinaceous components of a complex extracellular matrix and are produced by many these organisms Enterobacteriaceae. 8 9 They are ~~thin, coiled fibers~~ expressed as thin, coiled fibers at on the cell surface, and ~~of cells that~~ bind several matrix and plasma proteins, such as fibronectin, laminin, plasminogen, and azo dyes such as ~~like~~ Congo red. Raw vegetables, and fruits and unpasteurized juices contain a number of several ~~curli~~ curli-producing foodborne pathogens, which are associated with ~~food~~ food-related diseases. These ~~ese~~ curli producers pathogens form biofilms on fresh produce as well as on food contact surfaces, ~~resulting in~~ and result in cross-contamination of produce. Curli-Curli-producing bacterial strains are characterized by their ability to bind Congo red, ~~which~~ provides a simple screening method for ~~in vitro~~ curli production. The Congo red binding technique has a qualitative as well as a quantitative approach. Curli-producing organisms ~~producers~~ were isolated from fresh produce and unpasteurized carrot juice using modified Luria-Bertani (LB) medium. Curli-These producing organisms formed dry, red, rough colonies on modified LB medium, ~~while nonproducers~~ those not producing curli formed smooth, white colonies. 10 11 12 13 14 15 16 The parameters that control curli production such as temperature and osmolarity that control curli production were evaluated using this Congo red binding technique. Results revealed that The resistance of biofilms formed by curli-producing organism was evaluated and found that curli production increases the resistance of biofilms to various commercially used sanitizers.]

[Remark 1]: Please check the edited sentence for any modification of intended meaning.

- 1 **Language:** Revision made for conciseness and readability.
- 2 **Language:** The sentence was reconstructed for clarity and conciseness.
- 3 **Language:** This sentence has been heavily revised for a concise, clear, fluent output. To ensure no meaning change, a remark has been added for the author.
- 4 **Language:** Here “minimum” is a more technically correct term than “minimal.”
- 5 **Language:** Here a wordy phrase has been replaced by a concise term for conciseness.
- 6 **Subject-area:** Gene names are spelled out completely at their first mention.
- 7 **Subject area:** This phrase has been placed here to allow for a better flow of information.
- 8 **Subject area:** This term is required here for clarity.
- 9 **Subject area:** Here, “stages” is a better word than “steps.”
- 10 **Subject area:** Discipline-specific language revision has been made here.
- 11 **Style:** In American English, a comma is placed before “and/or” in lists.
- 12 **Attention to detail:** Compound adjectives are usually hyphenated.
- 13 **Language:** The sentence has been edited for conciseness.
- 14 **Journal format:** As per the journal guidelines, latin words should be italicized.
- 15 **Language:** Sentence edited for enhanced readability.
- 16 **Subject area:** The syntax has been greatly improved for grammatical correctness and clarity.