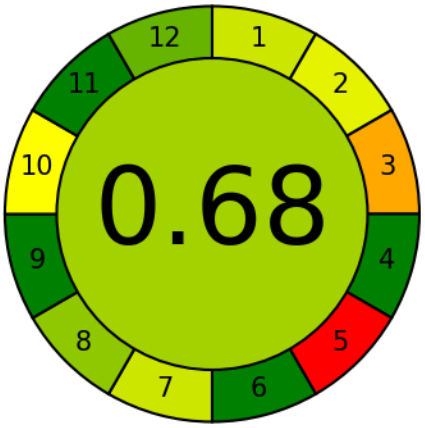
SUPPLEMENTARY FILE

AGREE Report of Developed methods



1. Sample treatment
2. Sample amount
3. Device positioning
4. Sample prep. stages
5. Automation, miniaturization
6. Derivatization
7. Waste
8. Analysis throughput
9. Energy consumption
10. Source of reagents
11. Toxicity
12. Operator's safety

Criteria	Score	Weight
1. Direct analytical techniques should be applied to avoid sample treatment.	0.6	2
2. Minimal sample size and minimal number of samples are goals.	0.55	2
3. If possible, measurements should be performed in situ.	0.33	2
4. Integration of analytical processes and operations saves energy and reduces the use of reagents.	1.0	2
5. Automated and miniaturized methods should be selected.	0.0	2
6. Derivatization should be avoided.	1.0	2
7. Generation of a large volume of analytical waste should be avoided, and proper management of analytical waste should be provided.	0.6	2
8. Multi-analyte or multi-parameter methods are preferred versus methods using one analyte at a time.	0.72	2
9. The use of energy should be minimized.	1.0	2
10. Reagents obtained from renewable sources should be preferred.	0.5	2
11. Toxic reagents should be eliminated or replaced.	1.0	2
12. Operator's safety should be increased.	0.8	2

AGREE Report of Reported TLC method(13)

1. Sample treatment
2. Sample amount
3. Device positioning
4. Sample prep. stages
5. Automation, miniaturization
6. Derivatization
7. Waste
8. Analysis throughput
9. Energy consumption
10. Source of reagents
11. Toxicity
12. Operator's safety

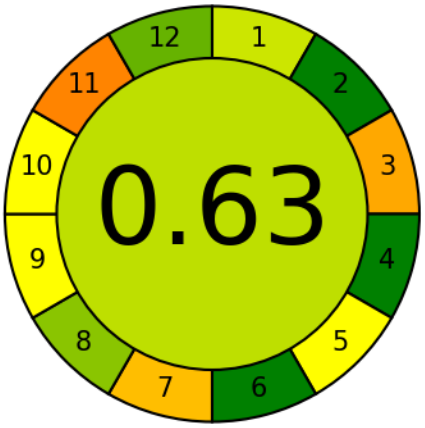
Criteria	Score	Weight
1. Direct analytical techniques should be applied to avoid sample treatment.	0.6	2
2. Minimal sample size and minimal number of samples are goals.	1.0	2
3. If possible, measurements should be performed in situ.	0.33	2
4. Integration of analytical processes and operations saves energy and reduces the use of reagents.	1.0	2
5. Automated and miniaturized methods should be selected.	0.5	2
6. Derivatization should be avoided.	1.0	2
7. Generation of a large volume of analytical waste should be avoided, and proper management of analytical waste should be provided.	0.73	2
8. Multi-analyte or multi-parameter methods are preferred versus methods using one analyte at a time.	1.0	2
9. The use of energy should be minimized.	0.5	2
10. Reagents obtained from renewable sources should be preferred.	1.0	2
11. Toxic reagents should be eliminated or replaced.	1.0	2
12. Operator's safety should be increased.	0.8	2

AGREE Report of Reported TLC method(12)

1. Sample treatment
2. Sample amount
3. Device positioning
4. Sample prep. stages
5. Automation, miniaturization
6. Derivatization
7. Waste
8. Analysis throughput
9. Energy consumption
10. Source of reagents
11. Toxicity
12. Operator's safety

Criteria	Score	Weight
1. Direct analytical techniques should be applied to avoid sample treatment.	0.6	2
2. Minimal sample size and minimal number of samples are goals.	1.0	2
3. If possible, measurements should be performed in situ.	0.33	2
4. Integration of analytical processes and operations saves energy and reduces the use of reagents.	1.0	2
5. Automated and miniaturized methods should be selected.	0.5	2
6. Derivatization should be avoided.	1.0	2
7. Generation of a large volume of analytical waste should be avoided, and proper management of analytical waste should be provided.	0.73	2
8. Multi-analyte or multi-parameter methods are preferred versus methods using one analyte at a time.	1.0	2
9. The use of energy should be minimized.	0.5	2
10. Reagents obtained from renewable sources should be preferred.	0.5	2
11. Toxic reagents should be eliminated or replaced.	0.55	2
12. Operator's safety should be increased.	0.4	2

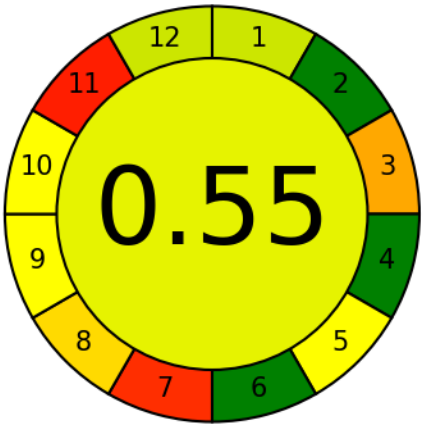
AGREE Report of Reported HPLC method(12)



1. Sample treatment
2. Sample amount
3. Device positioning
4. Sample prep. stages
5. Automation, miniaturization
6. Derivatization
7. Waste
8. Analysis throughput
9. Energy consumption
10. Source of reagents
11. Toxicity
12. Operator's safety

Criteria	Score	Weight
1. Direct analytical techniques should be applied to avoid sample treatment.	0.6	2
2. Minimal sample size and minimal number of samples are goals.	1.0	2
3. If possible, measurements should be performed in situ.	0.33	2
4. Integration of analytical processes and operations saves energy and reduces the use of reagents.	1.0	2
5. Automated and miniaturized methods should be selected.	0.5	2
6. Derivatization should be avoided.	1.0	2
7. Generation of a large volume of analytical waste should be avoided, and proper management of analytical waste should be provided.	0.37	2
8. Multi-analyte or multi-parameter methods are preferred versus methods using one analyte at a time.	0.73	2
9. The use of energy should be minimized.	0.5	2
10. Reagents obtained from renewable sources should be preferred.	0.5	2
11. Toxic reagents should be eliminated or replaced.	0.26	2
12. Operator's safety should be increased.	0.8	2

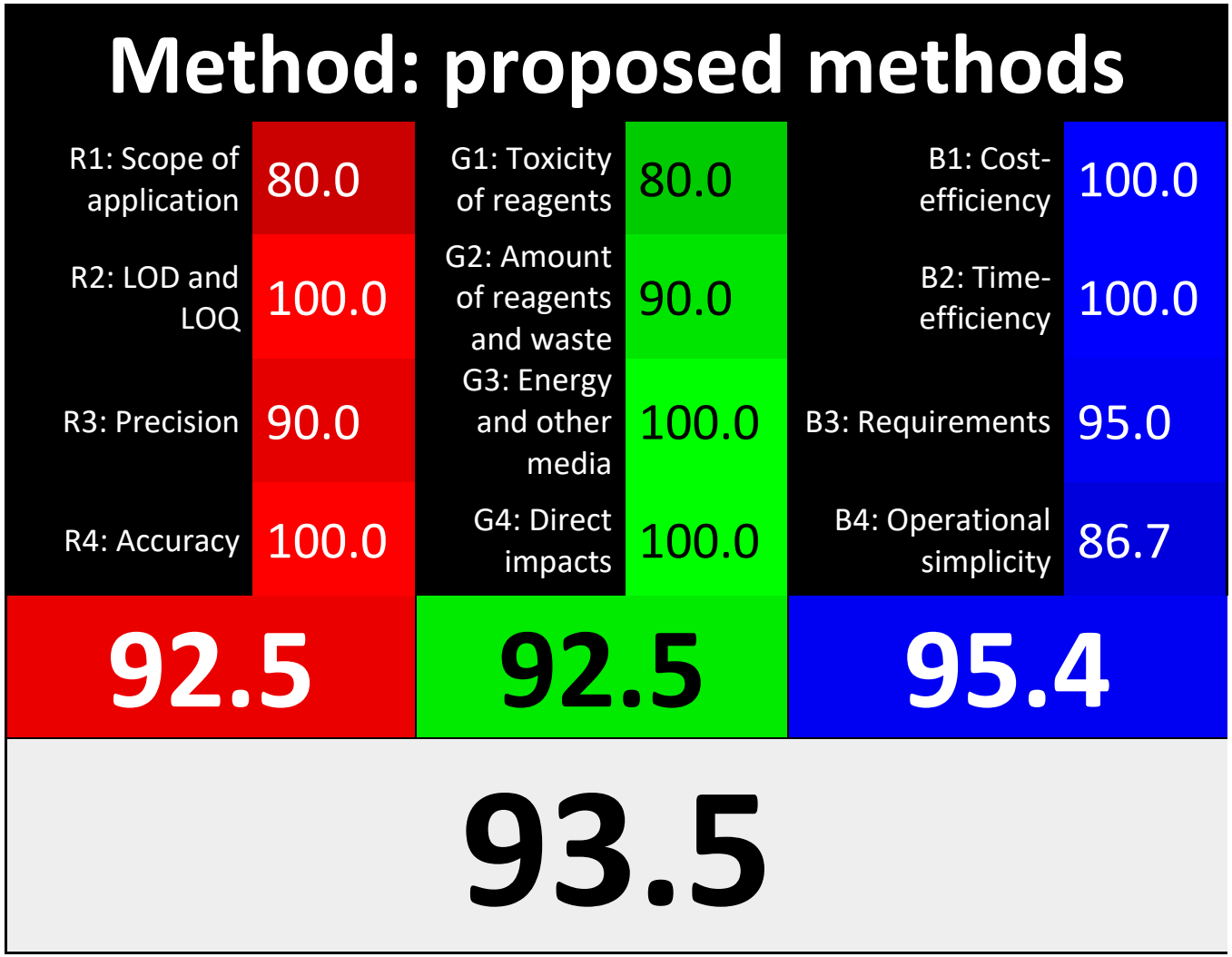
AGREE Report of Reported HPLC method(11)

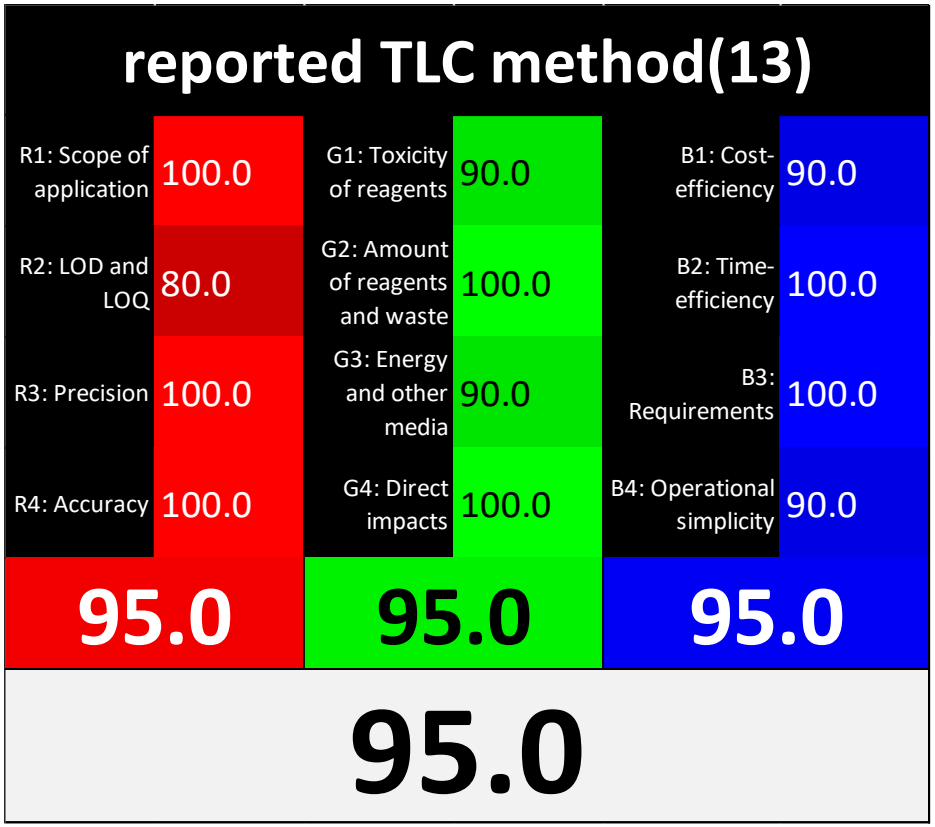


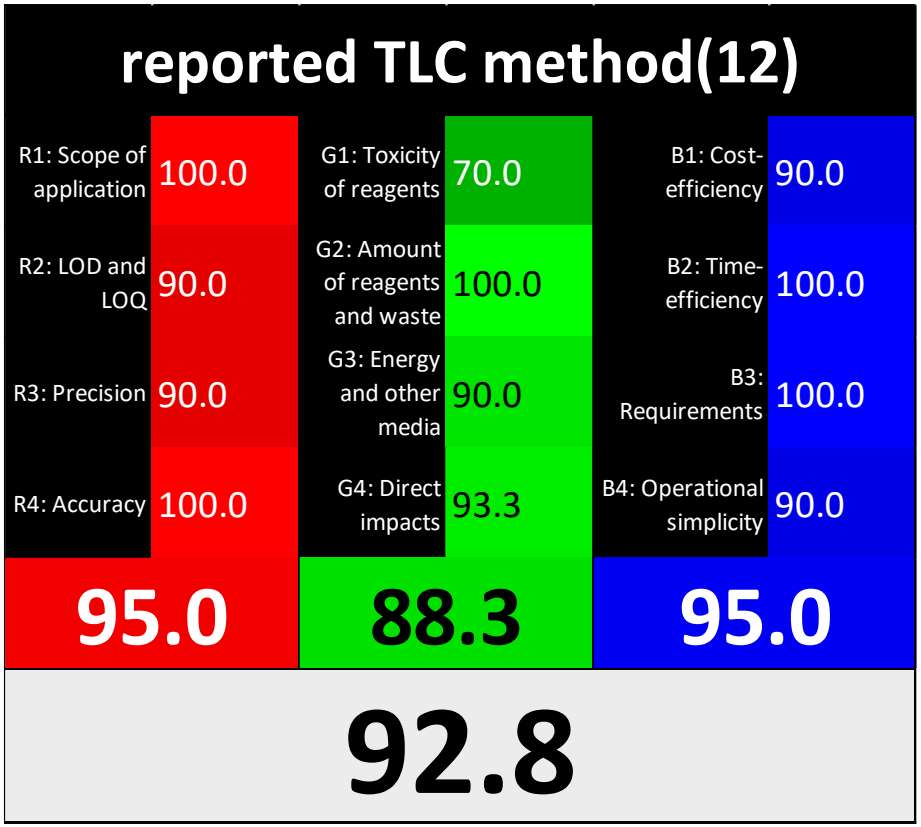
1. Sample treatment
2. Sample amount
3. Device positioning
4. Sample prep. stages
5. Automation, miniaturization
6. Derivatization
7. Waste
8. Analysis throughput
9. Energy consumption
10. Source of reagents
11. Toxicity
12. Operator's safety

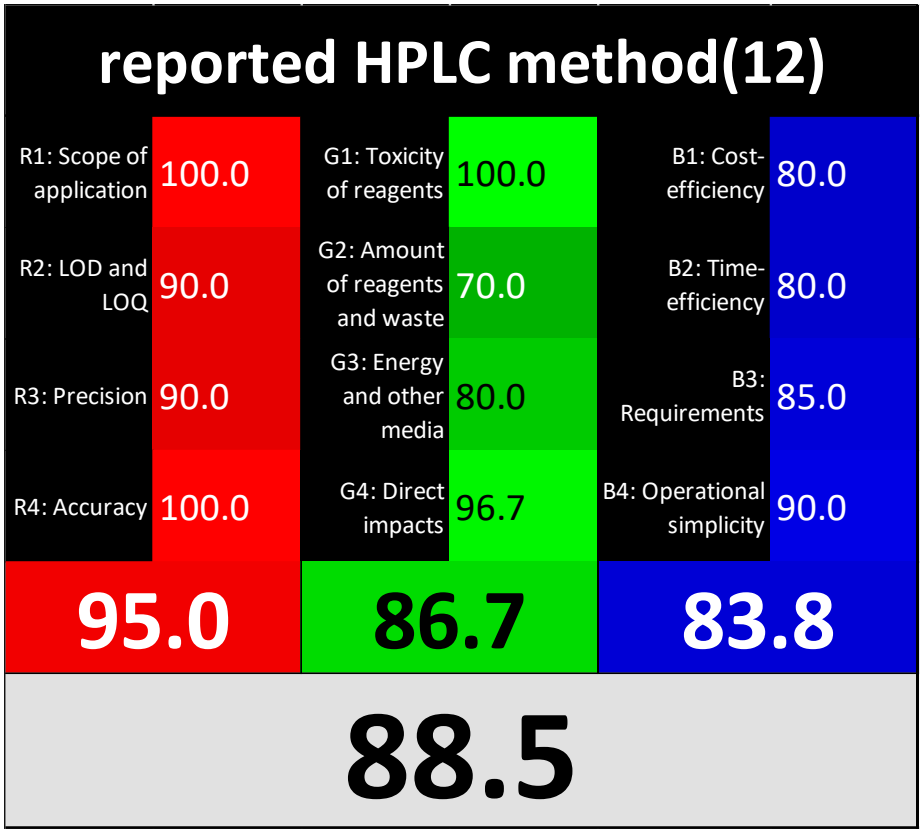
Criteria	Score	Weight
1. Direct analytical techniques should be applied to avoid sample treatment.	0.6	2
2. Minimal sample size and minimal number of samples are goals.	1.0	2
3. If possible, measurements should be performed in situ.	0.33	2
4. Integration of analytical processes and operations saves energy and reduces the use of reagents.	1.0	2
5. Automated and miniaturized methods should be selected.	0.5	2
6. Derivatization should be avoided.	1.0	2
7. Generation of a large volume of analytical waste should be avoided, and proper management of analytical waste should be provided.	0.09	2
8. Multi-analyte or multi-parameter methods are preferred versus methods using one analyte at a time.	0.43	2
9. The use of energy should be minimized.	0.5	2
10. Reagents obtained from renewable sources should be preferred.	0.5	2
11. Toxic reagents should be eliminated or replaced.	0.06	2
12. Operator's safety should be increased.	0.6	2

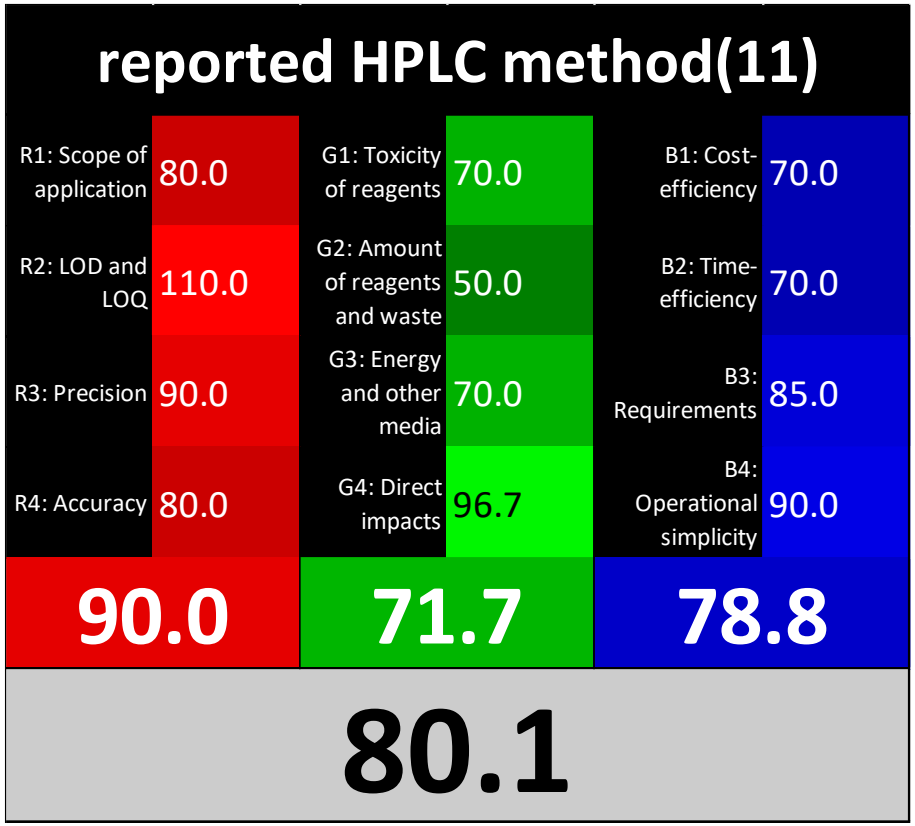
Results of whiteness appraisal of the proposed methods and reported chromatographic methods

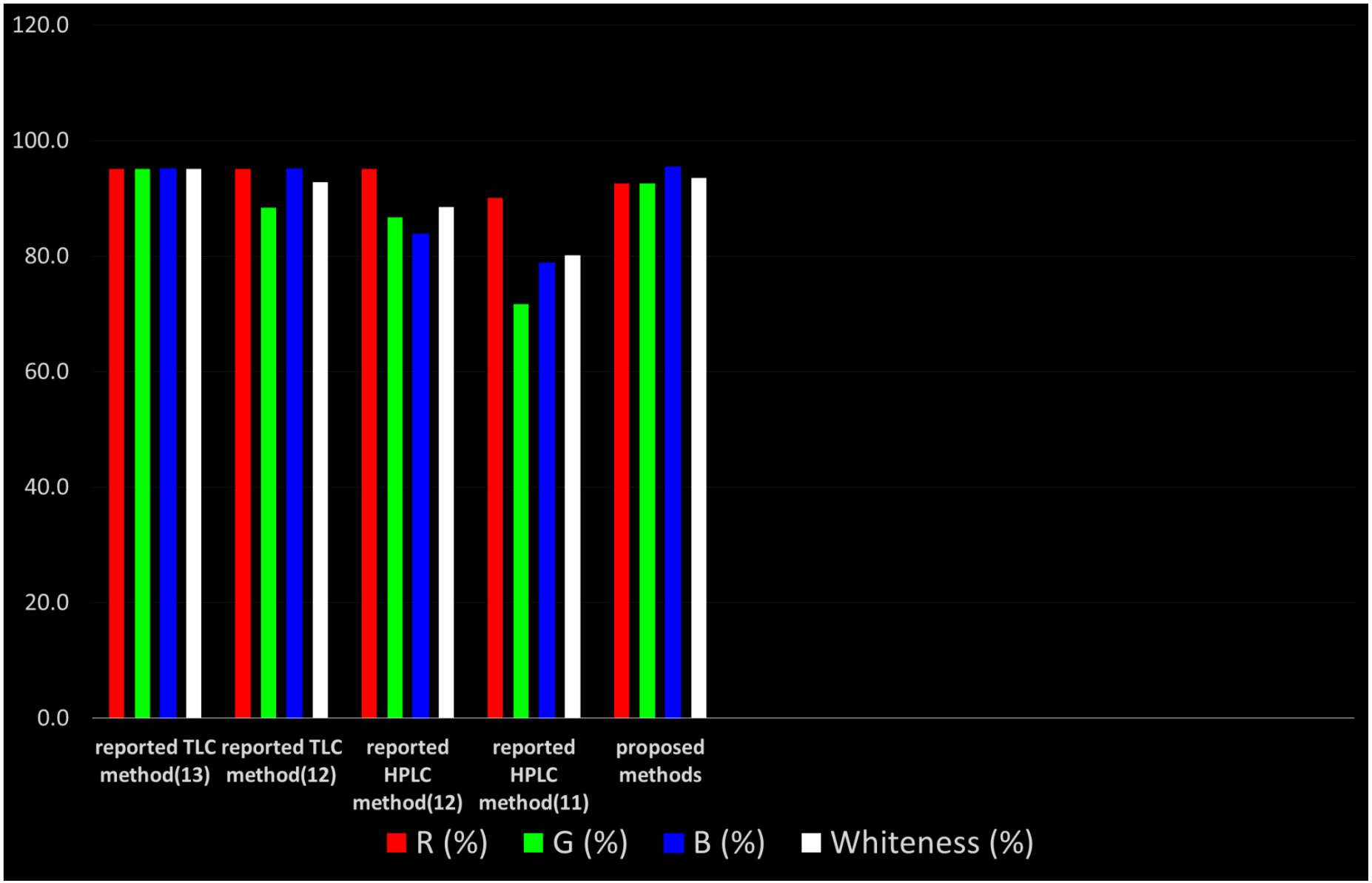



reported TLC method(13)
R1: Scope of application
100.0
R2: LOD and LOQ
80.0
R3: Precision
100.0
R4: Accuracy
100.0
G1: Toxicity of reagents
90.0
G2: Amount of reagents and waste
100.0
G3: Energy and other media
90.0
G4: Direct impacts
100.0
B1: Cost-efficiency
90.0
B2: Time-efficiency
100.0
B3: Requirements
100.0
B4: Operational simplicity
90.0
95.0
95.0
95.0
95.0


reported TLC method(12)
R1: Scope of application
100.0
R2: LOD and LOQ
90.0
R3: Precision
90.0
R4: Accuracy
100.0
G1: Toxicity of reagents
70.0
G2: Amount of reagents and waste
100.0
G3: Energy and other media
90.0
G4: Direct impacts
93.3
B1: Cost-efficiency
90.0
B2: Time-efficiency
100.0
B3: Requirements
100.0
B4: Operational simplicity
90.0
95.0
88.3
95.0
92.8


reported HPLC method(12)
R1: Scope of application
100.0
R2: LOD and LOQ
90.0
R3: Precision
90.0
R4: Accuracy
100.0
G1: Toxicity of reagents
100.0
G2: Amount of reagents and waste
70.0
G3: Energy and other media
80.0
G4: Direct impacts
96.7
B1: Cost-efficiency
80.0
B2: Time-efficiency
80.0
B3: Requirements
85.0
B4: Operational simplicity
90.0
95.0
86.7
83.8
88.5


reported HPLC method(11)
R1: Scope of application
80.0
R2: LOD and LOQ
110.0
R3: Precision
90.0
R4: Accuracy
80.0
G1: Toxicity of reagents
70.0
G2: Amount of reagents and waste
50.0
G3: Energy and other media
70.0
G4: Direct impacts
96.7
B1: Cost-efficiency
70.0
B2: Time-efficiency
70.0
B3: Requirements
85.0
B4: Operational simplicity
90.0
90.0
71.7
78.8
80.1


120.0
100.0
80.0
60.0
40.0
20.0
0.0
reported TLC method(13)
reported TLC method(12)
reported HPLC method(12)
reported HPLC method(11)
proposed methods
R (%)
G (%)
B (%)
Whiteness (%)